

BikesEtc

THE BEST ROAD GEAR RATED

INSIDE

54 PAGE BUYER'S GUIDE

ReviewsEtc

Welcome to BikesEtc's reviews section. Whether you're after a bike, kit or accessory, we've put the latest gear through its paces to help you find what's right for you.

PHOTOGRAPHY: JONNY LEBRON, GAVIN GATE, HENRY CARTER



ALL-WEATHER JERSEYS



PERFORMANCE SADDLES



DISC BRAKE WHEELS

UPGRADE YOUR RIDE

PRO TEAM TECH FOR SPRING SPORTIVES

+ HOW TO...

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FIX A PUNCTURE IN 60 SECONDS P.25

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SWITCH TO CLIPLESS P.28

DREAM MACHINES

THREE NEW SUPERBIKES PUSHED TO THEIR LIMITS

ELECTION SPECIAL

WHICH PARTY SHOULD GET THE CYCLIST VOTE?

BIKE TEST

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ISSUE 007





The Visioner C Carbon. Brother to 'Super Bike of the Year' 2014/15. From £1,799 or £67.50pm.

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is our way of finding better solutions to lightness, stiffness, comfort and performance, by looking beyond industry conventions. It has helped us create the best bike in the world 2007, 2010, 2011, 2013 and now again in 2014/15 with the Aernario Platinum. The Visioner C Carbon shares the same genes. Enough said. **Find out more at storck-bicycle.cc**

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Pro tech

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On location

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ReviewsEtc

Welcome to BikesEtc's reviews section. Whether you're after a bike, kit or clothing, we've put the latest gear through its paces to help you find what's right for you

PHOTOGRAPHY: JONAS LERCHNER, DANNY BIRD, HENRY CARTER



HERE'S HOW OUR REVIEWS WORK...

ReviewsEtc is your essential buyer's guide to the best road cycling products. Every month, we feature in-depth group tests of the latest bikes, clothing, components and accessories to ensure you're as well informed as possible when it comes to spending your cash. We know that making the right decision is equally important whether you're spending £10 on a pair of socks or several thousand on a new bike.

For each group test, we use an extensive set of criteria, including performance, ease of use, build quality and value for money. We take our time to come up with the best way to test every product, whether that means building a special rig to test pump pressure or standing out in a pitch-black country lane in the middle of the night to measure lighting beam patterns. Note that all weights and measurements are

taken from our own testing procedures, not from the details supplied by the manufacturer.

We then take the products out for road testing, riding, using and wearing them as thoroughly as possible on commutes, training rides and even in races, to see how well made and durable they are and how well they cope with real-world cycling situations.

Outside of our main reviews section, we also give scores for many of the other bikes and products we feature in the magazine. Although our First Ride bike tests are not as in-depth as our main reviews, we aim to give you an at-a-glance overview of the key features, characteristics and qualities of the bike based on our first impressions. Many of these bikes will then be subjected to full long-term testing to appear in group test reviews in a future issue.

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Rating

ERGONOMICS
CONSTRUCTION
EASE OF USE

For each group test, we score the products based on a comprehensive range of criteria. There isn't space to give a full breakdown of the scoring, but we highlight the most important and relevant features so you can see in which areas each product performs especially well, and where its weak spots lie.

Giving extra weight to the most important features, we add up the ratings for each product and convert them into an overall score out of 10. Note that while two products may achieve the same overall score, they may be very different in key areas – see individual ratings for further detail.

OVERALL

7

10

THE AWARDS



Best Value

Winners of this award may not have the highest overall score in their group test, and may not be the cheapest, but they will always represent especially good performance for their price.



Best In Test

The overall winner in each test. Scoring highly in all criteria, this will be an excellent all-rounder, often with an extra something – a touch of style, a special feature – that sets it apart.



BikesEtc Gold Award

This award goes to bikes, kit or components with exceptional levels of performance and design. Don't expect to see it every issue – we only hand it out when it's truly deserved.

THE SMARTS
IN CYCLING



MIRROR MODE

MOUNT ON BIKE -
EFFORTLESS TO
VIEW & OPERATE.



HEART RATE

150

PLACE IN POCKET -
KEEP YOUR PHONE
SAFE AND PRESERVE
THE BATTERY.



SENSOR DIRECT MODE

SPEED

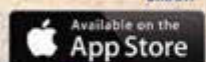
CADENCE

POWER

26.5

91

218



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CYCLING SUPERIORITY

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ED'S LETTER



It's amazing what's available to the amateur cyclist these days. Back in the 80s, when I first got into the sport, my hero was Robert Millar, the UK's most successful cyclist at the time. When he took the 1984 Tour de France King of the Mountains jersey he was riding a PY-10FC bike made by Peugeot (well, Vitus), which combined aluminium lugs with carbon fibre main tubes. It was the height of bike tech and ushered in an age of carbon that still dominates the pro peloton today.

For those of us wanting to emulate Millar the nearest we could get was the steel-framed Perthus Pro, which weighed a whopping 10kg. I never raced myself but I had friends who did and on the same model, the idea of owning a carbon bike a particularly unachievable pipe dream.

How things have changed: carbon bikes are now well within reach of most people's pockets, while for those whose pockets go a little deeper, not only can you wear exactly the same kit as your heroes, you can ride exactly the same bikes too. The pro experience is available to all - at a price.

What won't cost you so much is the knowledge - the thinking behind the technological advances - not only in bike production but nutrition and training too. Our Pro Tech special (p49) brings together expert advice from the people behind the pros, compiled by us to improve your riding.

If you like what you see in this issue why not take out a subscription and have BikesEtc delivered to your door before it hits the shops. See page 34 or visit dennismags.co.uk/bikesetc for details.

'The pro experience is available to all - at a price'



Wesley Doyle, Editor

BikesEtc

Issue 007 / May 2015

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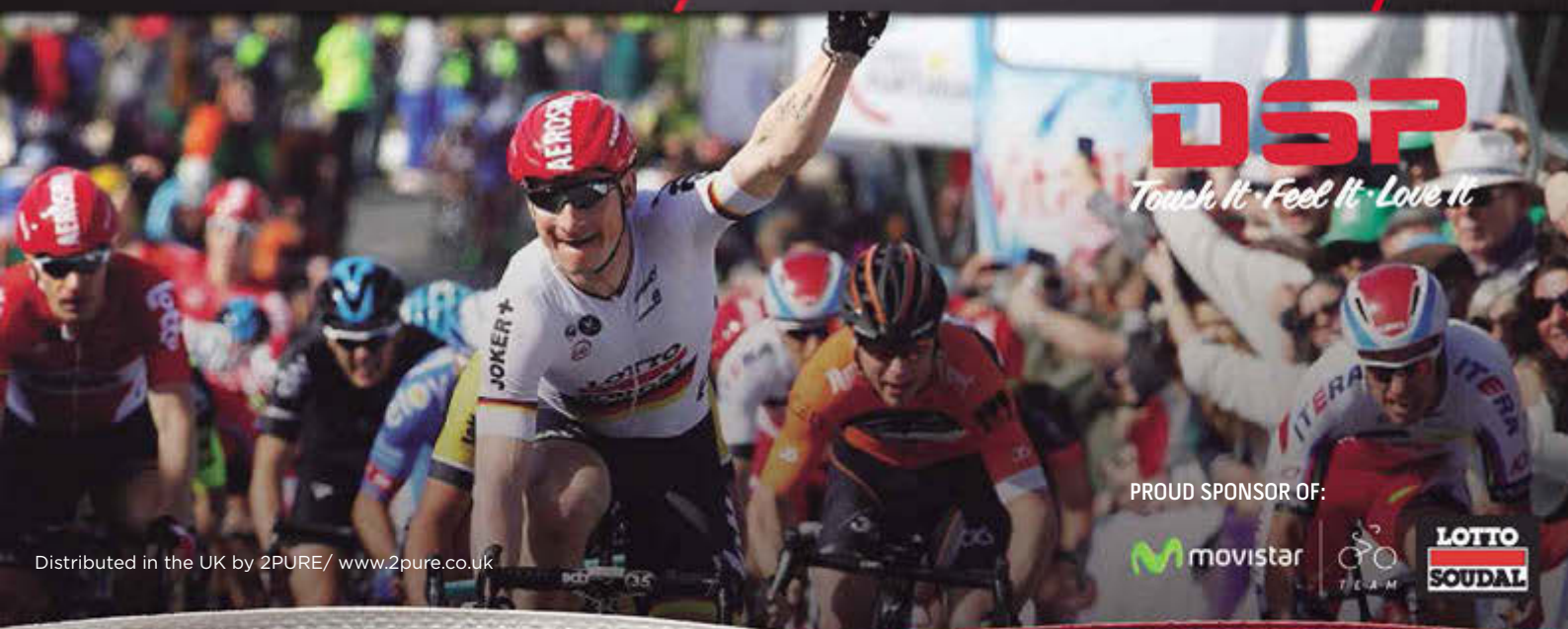
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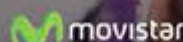


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FIRST RIDE

NEW BIKES ■ FUTURE KIT ■ LATEST TECH



MEKK PRIMO 6.2

With carbon-clincher wheels and aero frame, the Primo 6.2 arrives ready and able

£2,000





The C50 Full Carbon Clincher wheelset is Saturae branded – Mekk's in-house label



Saturae equipment includes the stem and bars, enhancing the race characteristics



Internal cable routing and a concealed seatpost clamp add to the frame's neatness

I

f we had to draw up a list of what makes a difference in a race bike, in order of importance, it would look like this:

1. Geometry. Position on the bike is the most important thing. Finding that balance

between aerodynamics, the ability to lay down the power and handling is the Holy Grail.

2. Frame. Needs to be stiff, light and precise – comfort barely comes into it.

3. Wheels. We want aerodynamics, stiffness and light weight all in one package. Braking is less of a concern, as most amateur races are contested on short circuits where the descents are brief and relatively safe.

4. Components. So long as the bars, stem, seatpost and saddle allow for a good fit, there's little to be gained from spending extra. When it comes to groupsets, if the gears change when you want them to and the brakes work, you can't ask for much more.

What you tend to see is that manufacturers juggle points 3 and 4 around, so a bike with a nice frame and great geometry gets expensive components and a top-end groupset, topped off with cheap wheels. That's OK for most of the market, but for the few

who want to pin on a number and go racing, it's unsatisfactory. You buy a bike, then feel immediately compelled to fork out for some competition wheels.

Which is why we were intrigued when we first saw the Mekk Primo 6.2 – a £2k race bike that has its priorities exactly where we want them to be: the frame and wheels. With deep-section carbon-clincher wheels, this bike looks unlike anything else we've seen at this price, but it's exactly what we'd be looking at for a season of amateur circuit races, occasional sportives and lots of training.

'We spent a lot of time thinking about what the consumer wants,' says Mark Edwards, who, together with Ken Knight, runs Mekk. 'We looked at the market and figured there were a lot of riders who'd like an all-round road bike that they would be proud of, but didn't want to spend £4,000. It was the cost of carbon wheels that was prohibitive – a lot of them are over £2,000 and really specialist, for time-trials or triathlons. We thought we could produce a wheelset for a better price by making them ourselves.'

The Saturae C50 clincher wheels are fairly basic as carbon wheels go, but here they are the heart of the package, offering many of the benefits of more expensive wheelsets at a fraction of the cost. Cheaper Asian-manufactured carbon wheels have been coming into the UK via Alibaba and eBay for some

Frameset: Monocoque carbon, full carbon fork

Wheels: Saturae C50 Full Carbon Clincher

Tyres: Continental Grand Sport Race, 23c

Groupset: Shimano 105

Bars: Saturae Curve

Stem: Saturae

Seatpost: Mekk Carbon Aero

Saddle: San Marco ERA Dynamic

Price: £2,000

Contact: mekkbicycles.com



As groupsets go, the 11-speed 105 is fairly cheap, but cutting edge


time, but with little in the way of marketing, testing or independent reviews, buying these products has been a leap of faith. Through its own testing, Mekk is confident that the wheels specced on the Primo 6.2 are up to scratch – most importantly for carbon clinchers, in terms of heat dissipation on long descents. ‘We did a lot of testing on the wheels before we finalised the design,’ says Edwards. ‘That meant a lot of long descents to check they coped with the heat, both here and out in Australia, where it’s obviously hotter. I also rode them in the Tour of Flanders Sportive last year, and I’m still riding that wheelset today.’ Considering Edwards says he weighs 85kg, that’s reassuring.

In practice, the wheels are stiff and roll along with noticeable momentum, but braking is nothing like as good as it is with alloy rims. On a group ride or in a race it’s no big deal, but drafting double-decker buses on your commute looks even less like a good idea on carbon rims. However, our demo bike came with standard Shimano rubber pads whereas production bikes will come with carbon-specific brake pads, which should make a big difference.

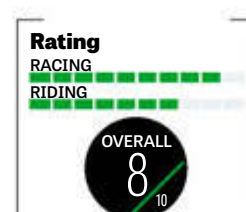
The wheels bear the Saturae label, Mekk’s in-house parts and accessories brand, and the bars and stem come from the same stable. They’re unfussy alloy units that do everything they need to

do without adding unnecessarily to the price tag. We were perfectly happy with them, but speaking to Edwards, it’s clear he sees the Primo 6.2 as a starting point, where the important, expensive parts are taken care of while the less sensitive elements are easy upgrades for the consumer.

The same goes for the groupset. Shimano’s 11-speed 105 may be relatively inexpensive, but it does such a good job, it’s hard to imagine why anyone would spend more on the mechanical versions of Ultegra or Dura-Ace. For us, we’d rather save the money and put it towards a week’s training in the sun – something that will make a far more tangible difference to your enjoyment than the few grams you save from spending more on your drivetrain.

While Edwards considers the Primo 6.2 an all-rounder, we’re inclined to think of it mostly as a race bike. Racers are the ones who will lap up the aero benefits of the wheels without worrying too much about the relatively insubstantial braking, and it’s racers who will gladly overlook the more agricultural elements of the design – the seatpost clamp or the noise of the cables rattling in the frame when you hit a pothole, for instance. But that’s not necessarily a bad thing. After all, Porsche made tractors in the 1950s and 1960s, and it hasn’t done its racing pedigree any harm. 

‘We looked at the market and figured there were a lot of riders who’d like an all-round road bike that they would be proud of, but didn’t want to spend £4,000’



WHYTE CORNWALL

Matching versatility with light weight, Whyte's carbon all-rounder is county class

PRICE: £1,799 CONTACT: WHYTE.BIKE

W

hyte is a British brand that has been doing things differently for the last decade. Having entered the bike world's public consciousness via mountain biking, it has established a

reputation for future-proof bikes that reflect the direction riders are heading before the riders themselves realise it. With a lead designer who spent a number of seasons racing at an elite level on the road in France, that Whyte should choose to start producing drop-bar bikes is no surprise. Given the MTB pedigree, that those road bikes should break established moulds is even less of a surprise.

The Cornwall sits at the top of Whyte's commuter/road range, and while there are some concessions to urban riding (security axle bolts fitted as standard, for example – a special five-sided tool is supplied) we're more inclined to see it as an all-round road bike, ready for winter miles to summer smiles.

In fact, we reviewed the Cornwall's £1,199 sibling, the Suffolk, in issue two's winter-bike group test. On the face of it, that's a similar bike to this, except it's aluminium and uses a Shimano groupset with TRP Hy/Rd brakes. Our only criticism of the Suffolk was that as a versatile aluminium bike, it was on the porky side at 9.97kg. Having had a carbon-fibre face-lift, the Cornwall is over a kilo lighter at 8.88kg, much of which will have come out of the frame. Some will be from the groupset, SRAM's excellent hydraulic Rival (here in a 10-speed variant, using SB700 shifters, not the official 11-speed Rival).

We're big fans of SRAM's third-tier Rival groupset and the hydraulic version is especially covetable. The hoods are not to everyone's decorative taste, but they're hardly folderol, housing the hydraulic reservoirs necessary for the brakes to function, and while they're undoubtedly tall, the fringe benefit is unparalleled security of grip on the hoods. On descents where you'd instinctively reach for the drops, you find yourself casually resting on the hoods, confident that your hand won't shift, and you have ample power available to brake when necessary.

The wheels use offset rims, asymmetric in profile, which allows for tension on both sides of the wheels to be more even, something that should boost longevity. It also means the spokes are the same length each side – handy if you snap one. The wheels are supplied with 25mm tyres but there is clearance for far bigger treads – even with mudguards fitted (these are specially designed by Whyte, attach to the fork and seatstays and cost just £30). On



The hydraulic version of SRAM's third-tier Rival groupset is superb, even in non-standard 10-speed

Frame: Uni-directional multi monocoque carbon with internal cable routing

Wheels: Whyte alloy hubs, Whyte Disk Road rims, 32mm deep, security skewers

Tyres: Maxxis Detonator, 25c

Groupset: SRAM Rival/SB700 10-speed

Bars: Whyte compact wing bar

Stem: Whyte (110mm on the 54)

Seatpost: Whyte 20mm Offset, 27.2mm

Saddle: Whyte

Price: £1,799

Contact: whyte.bike

Offset asymmetric rims give better balanced tension on both sides of the wheel – so they should last longer



27.2mm seatpost and skinny seatstays give a comfortable ride



With a low-angle top tube and long wheelbase, the Cornwall looks and feels bigger than it actually is

Rating

CONFIDENCE

VERSATILITY

COMMON SENSE

OVERALL

9

10

With the simple addition of £30 mudguards, we'd happily ride this every day



Internal cable routing neatens the stealth-fighter feel


top of making it harder to steal your wheels, the supplied security skewers have the added bonus of better resisting the forces exerted by disc brakes than normal quick releases.

Whyte has specced the Cornwall with an FSA chainset and matching bottom bracket. What's interesting about this set-up is that it uses a standard threaded bottom-bracket shell – creak-free, reliable and easy to replace – but still manages to squeeze in an oversized 30mm aluminium crank axle.

What's more, the chainline on the Gossamer Pro Compact is 47.5mm, rather than the 43.5mm that is more typical of road chainsets. This reflects the spreading of the rear stays from 130mm to 135mm to cater for the addition of a disc-brake calliper. The chain will remain more securely in place, especially going into a corner on a fast downhill and back-peddalling half a revolution to line your feet up for the turn. With the chainline sorted, the chance of the chain falling off is greatly reduced. That's the kind

of problem solving we like to see. On the road, a long wheelbase, low bottom bracket and relatively slack head angle make for a confident, if not especially lively ride, but that's no bad thing. There's a lot to be said for predictability when riding new roads or you're getting tired at the end of a long day out.

The measurements confirm that our test bike is a 54cm, but it looks bigger; that long wheelbase and the less-sloping-than-usual top tube create an optical illusion. Get riding and the impression of size remains. The bars, for instance, may be 42cm across the hoods, but at the bottom of the drops, they've flared to 46.5cm. The reality is, this feels great – a comfortable position to ride in or descend.

The Cornwall isn't the most urgent bike, but the weight loss over the Suffolk makes a noticeable difference. With the simple addition of £30 mudguards, we'd happily ride this, as it is, for everyday use, then swap in lighter wheels for sportive duties. Hey presto, you've got a bike for all eventualities. 

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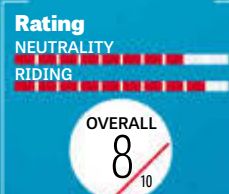
Fuel consumption figures for Fiat 500 range in mpg (l/100km): Urban 49.6 (5.7) – 64.2 (4.4); Extra Urban 65.7 (4.3) – 91.1 (3.1); Combined 58.9 (4.8) – 76.3 (3.7). CO₂ emissions 113 – 90 g/km. Fuel consumption and CO₂ figures based on standard EU tests for comparative purposes and may not reflect real driving results. *Under current DVLA regulations there is no charge for Vehicle Excise Duty in the first year of registration and every subsequent year. Vehicle Excise Duty rates are reviewed annually by the government and are subject to change.



EDCO OPTIMA ROCHES WHEELSET

Bespoke Swiss ingenuity

PRICE: £550 (INC TYRES)
CONTACT: EDCO-WHEELS.CO.UK



We've long known that the Swiss cherish their neutrality in matters of international relations, but we were surprised to discover that Edco Optima Roches wheels sit on the fence when choosing between Japan and Italy.

What are we talking about? Edco's MultiSys freehub body allows you to run any cassette you like, Campagnolo or Shimano. Japanese giant or plucky Italians? Don't tie yourself down! 'The company that owns Edco is an

engineering firm, so has come at this with a different viewpoint,' says UK distributor Shelley Childs, and from an engineering perspective the whole package is neat. The included 25mm Conti Grand Sport tyres look huge on the 24mm-wide, 22mm-deep alloy rims, but they absorb road buzz and give lots of grip with that broad contact patch.

'Edco has been making hubs since 1902,' adds Child, which is reassuring, as is the eight-year guarantee. At 1,655g per pair,

they're not the lightest wheels you can buy at this price, but they're very well put together, with many of the same components as Edco's top-end carbon wheels, and the ride quality is superb. They're also tubeless compatible and come supplied with quality quick-release skewers, good tyres and all the spacers necessary to accept different brands' cassettes – all of which makes us happy to nail our red-and-white flag to the mast and declare the Roches a great set of wheels.

ROTOR PRESS FIT BB30

No life of grime for aluminium bottom bracket


£45, ROTORUK.CO.UK

Bottom brackets used to be so simple. You screwed in some cups, bolted on your cranks and off you went. When the BB started creaking or grinding, you replaced it or, if it was rebuildable, you cleaned and re-greased the bearings and that was you done.

Then Cannondale launched BB30 in 2000, with oversized bearings sitting in cups inside the frame. The benefit is increased axle diameter, improving stiffness and power transfer, and the bearings are bog standard, which means replacing them is easy and cheap – as in £3 cheap, if you're clever – but the system has numerous downsides, not least poor sealing. BB30 also requires precise machining, which is costly, so manufacturers developed pressfit bottom brackets that

require less precise machining. The first pressfit bottom brackets used nylon cups that deformed to the frame, but bearing longevity proved to be even worse than true BB30.

To resolve this, companies like respected Spanish drivetrain specialist Rotor started creating aluminium pressfit bottom brackets. At £45, this version features intricate labyrinth seals to keep grime away from the bearings (available in steel or ceramic) and precision-engineered alloy cups that should stay put in your frame without creaking.

Rotor makes a huge range of bottom brackets, including the BSA30, which allows you to run 30mm axles (the BB30 standard) in a frame with a normal, threaded bottom bracket. We'll let you know how we get on with this one in due course. 



DHB AERON PRO BIBSHORTS

PRICE: £65 CONTACT: WIGGLE.CO.UK

Women's bibs that put the comfort into comfort breaks

Beware of all enterprises that require new clothes,' wrote American philosopher Henry David Thoreau in 1854. It's a thought that still troubles new cyclists today when it comes to buying their first pair of bibshorts, but having made that leap of faith, most are soon won over by their superior comfort.

There remains, however, the thorny issue of what to do when nature calls – a particular concern for women cyclists. Lately, we've seen Gore and Endura produce shorts with drop-down seats – like a more sophisticated take on the 'fireman's flap' in a pair of Victorian long johns. Wiggle's in-house brand dhb has taken a different approach for the 2015 model of its Aeron bibshorts for women, replacing the shoulder straps in the top-end Pro (pictured) and Race versions with a halterneck design.

It's one of those simple ideas that make you wonder why no one thought of it sooner: to remove the shorts, slip the strap over your head and pull it down under your jersey – no more faffing about shedding top layers first. In other respects, they're identical to the previous version, with a women-specific dual-density CyTech chamois pad that promises long-distance comfort.

Wiggle-Honda pro team riders have been using the shorts for a few months, and team manager Rochelle Gilmore describes them as 'supportive and super comfortable'. We'll be carrying out our own testing over the coming months, but if you can't wait for our verdict, the non-team issue version should be on sale by the time you read this.



ENDURA PACU SUNGLASSES

PRICE: £80 CONTACT: ENDURASPORT.COM

Year-round eye protection that balances style and value

To include the Pacu glasses in our First Ride section is a bit of a misnomer – we've actually been wearing them on and off since October last year. The simple fact is, though, that these glasses are brilliant: they're photochromatic, so there's no mucking about swapping lenses or getting caught out when the sun goes in; at their brightest they're almost perfectly clear, so you can wear them pretty much whatever the conditions. They're comfortable, they look good and they're well made. What's more, they're not so expensive that you feel the need to treat them with kid gloves at all time.

Endura has a reputation for producing great value kit that works, but even by those high standards, the Pacu glasses score a home run. Recommended.



SHIMANO SH-R171 SHOES

PRICE: £150 WEIGHT: 278G (SIZE 44) CONTACT: MADISON.CO.UK

Want to know how to solve pedalling discomfort? The answer's there in black and white

Over recent years we've found ourselves moving the cleats on our shoes further and further back on the sole. From a biomechanical perspective, the further back your cleat is, the shorter the lever of the foot becomes, and consequently your calf muscles have to do less work to keep the foot steady. If you've ever suffered with cramp in your calf muscles, try moving your cleats back, once you get used to it, going back to a more traditional position just feels weird by comparison.


We suspect we're not alone in this discovery as Shimano's new R171 shoes come with increased fore-aft cleat adjustment so

you can achieve once unimaginable positions. It's a welcome development, and a win-win – if you want your cleats in a normal position under the ball of the foot, you'll be fine, and you can even go further forward than that.

Elsewhere, the R171 employs offset straps to spread pressure across the foot, and breaks with tradition by placing the female part of the ratchet mechanism on the surround upper. It doesn't look any different when they're done up, but it caught us off guard when we first took them out of the box.

The second-generation Dynalast sole is designed to reduce tension, allowing a wider range of motion in the foot and

thereby reducing power loss on the upstroke. Shimano claims an improvement in pedalling efficiency of 0.56%, which might not sound much but could add up to a significant energy saving over the duration of a long ride. It's certainly comfortable, the new shape dual-density insole with a super-deep heel cup providing a fantastic fit.

The sole is made of a stiff unidirectional carbon composite, keeping the weight of our size 44 test sample down to 278g per shoe. Want something even lighter? Check out the £300 custom-fit R321. For us, though, the R171 looks like the perfect balance of performance, value and great looks. 

One-Two Punch.



Zipp's SL-70 Aero handlebar and SL Sprint stem -- two engineering marvels creating the ultimate carbon cockpit. With its wing-shaped bar top, the SL-70 Aero provides real aero benefit with a 70mm reach to allow proper fit without compromising stem length and steering control. The SL Sprint has highest stiffness-to-weight ratio of any stem on the market and comes in six sizes to meet any rider's fit needs. It's the perfect one-two punch.

Zipp SL-70 Aero handlebar
£ 266

Zipp SL Sprint stem
£ 190

ZIPP
www.zipp.com

SKILLS, TIPS
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Départ



FEED FOR SPEED

Carbo-loading is a proven nutritional technique to ensure your energy reserves are topped up for race day. Here are the fuelling fundamentals...

Words: James Witts

You may have booked your place ages ago but as the ringed date on the calendar looms ever closer and your race number arrives in the post, it dawns on you that in a few short weeks, it's Gran Fondo time. Aside from packing and re-packing your kitbag, you need to start thinking about ensuring your body has what it needs to

get through the day – and that means loading it with race-fuelling carbohydrates.

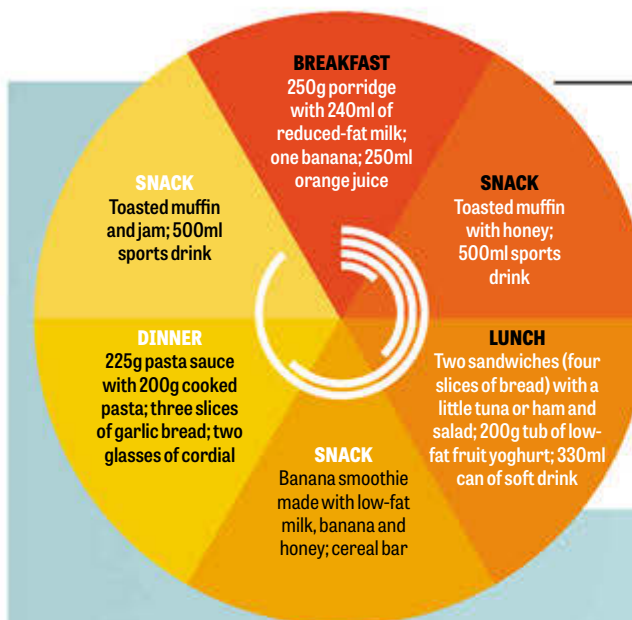
'The main purpose of carbo-loading is to drive as much glycogen into your muscles as you can pre-race,' says Lucy-Ann Prideaux, nutritionist at Simply Nutrition. 'It's known as "muscle glycogen supercompensation" and is done three to four days before your race.'

To understand the importance of carbohydrate loading for performance, first you must understand glycogen. This is the form in which the body stores the energy absorbed from carbohydrates, and is found in the muscles, liver and blood. The average rider can only store around 400-500g of carbs in this form. As 1g of carbs provides 4kcal, that's a capacity of around 1,600-2,000kcal.

PAID IN FUEL

Despite fat being the predominant energy source when riding at a moderate pace (say, 14mph if your average is 16mph), when effort rises and you're hitting 17-18mph, you can't break it down quickly enough to release energy. It's then the body turns to the more accessible glycogen stores, deriving around 85% of its energy from this source.

'If you're competing in a 50-mile race at an intensity of over 80% maximum heart rate – which is pretty common – you could be burning up to 5g of carbs per minute,' says sports scientist Garry Palmer. 'That equates to 20kcal per minute.'



GET A LOAD OF THIS

Here's a typical day's carbo-loading (left), courtesy of the Australian Institute of Sport, suitable for a 70kg athlete aiming to consume 9g of carbs per kilo of body weight (so a total of 630g of carbs). This sample plan provides 3,537kcal and is good news for sweet-toothed fans of comfort-food.



Now, when training regularly, your body never has the chance to fully replenish its glycogen stores before the next workout begins. So let's say Average Ed and Carbo Chris have equal capacities of 1,900kcal or 425g. Ed continues to train heavily up to race day and eats a normal diet, while Chris eases off the training and spends three days pre-race carbo-loading. Come the race start, Chris has reached his glycogen capacity of 425g while Ed, tired and hungry, is three-quarters full at 325g.

If both Ed and Chris race at 80% of their maximum intensity and are burning a conservative figure of 3g of carbs per minute, Ed's glycogen tank will empty in 1hr 48mins compared to Chris's 2hrs 22mins. Ed's power output plummets over 30mins before Chris's, meaning Chris storms to the finish line well ahead of his rival.

SUPERSIZE THE CARBS

So the performance benefits are clear but what's the procedure? 'Three or four days before you race, you should increase carbohydrate intake to 80% of your diet,' says Prideaux. 'This means eating a variety of complex carbohydrates as a small meal or snack every 2-3hrs.'


This translates to 7-10g of carbohydrates per kilogram of body weight. For an 80kg rider looking to consume 7g per kg, that would equate to 560g of carbs per day, or 2,240kcal simply from carbs. As this is 80% of your diet, you're looking at around 2,800kcal total per day for three days.

DON'T WORRY IF YOU START TO PUT A BIT OF WEIGHT ON. YOU'LL SOON LOSE THAT WITHIN AN HOUR OR SO OF RACING

How do you get these extra carbs? Protein and fat should be down, so reduce portions of tuna and chicken, and replace with larger portions – about half your plate – of wholegrain breads and pasta, legumes and brown rice. They're nutrient dense and will slowly deliver energy to your body. Sweets and doughnuts are also packed with carbs but they are made up of simple sugars, which the body burns quickly, so avoid these.

You can increase your Weetabix intake from two to three (an extra 26g or 104kcal of carbs); add in a carb-rich liquid replacement (Slim-Fast Rich Chocolate Shake has 26g of carbs per 325ml bottle); and double up on brown rice (400g offers 92g of carbs). Include home-made juice in your meals too – around 46kcal for 100ml of apple juice.

Don't worry if you start to put on a bit of weight: each gram of carbohydrate stores 3g of water and the hydration benefits far outweigh that extra weight anyway. Plus you'll soon lose that weight within an hour or so of racing.

Finally, it's worth practising your eating patterns for the big day beforehand – if your race starts at 8am, this means waking up at 5am for a pre-race porridge. Unfortunately, in the world of cycling, marginal gains can often mean marginal pains. 

ENERGY EATING

What gives you the most carb bang for your buck? The second value is what you'll get per stated portion

Portion	Food	Carbs
100g	dry weight quinoa	71g
250g	baked sweet potato	70g
100g	oats	66g
200g	cooked wholegrain rice	64g
200g	boiled pearl barley	55g
50g	oat bran	35g
50g	raisins	35g
400g	baked butternut squash	30g
50g	oatcakes	27g
150g	natural yoghurt	11g
200g	steamed broccoli	4g
1large	banana	35g
1each	apple and banana	40g

ENGINEERED FOR SPEED



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ON IN 60 SECONDS

Change an inner tube in less than a minute

An inconveniently timed puncture can reduce seasoned racers to tears at the roadside and ill-prepared commuters to fits of despondency in the gutter. However, with the right tools and technique, they needn't set your ride back by more than a minute or two. While you're probably better off taking a little more time and care over your puncture repair, once the wheel is off it's perfectly possible to go from deflated to elated in under 60 seconds. Follow our tips to find out how, then see if you can make it onto our flat-fixing leaderboard.



1

Get set, go!

First let any residual air out of the tube. If you want to get this job done inside a minute, there's no time for fiddling about with multiple levers. Standing above the wheel with the valve upmost, jam a single lever under the bead of the tyre near the top of the wheel. Using the palm of your hand, push down hard to pop the bead off the rim in a single motion. The rest of the bead should come off easily – but leave the other bead on the rim. Pull the old tube out, starting at the valve.



2

Less haste, more speed

There's no point racing away only to find that you've missed whatever was responsible for the puncture, causing you to re-flat a few hundred metres down the road. Leaving the tyre on the wheel, run your fingers around the inside of it to check for debris (beware of sharp flints or shards of glass that can cause cuts). Visually inspect the exterior at the same time. Once you've found the cause of the puncture, remove the offending item and check the tyre isn't fatally damaged.



3

Put your lips together and blow

Grab your replacement tube and discard the dust cap and locking collar (not in the hedgerow, mind – and the same goes for the old tube). Undo the valve, push the nipple in and blow into it with your mouth. You only need to fill it with enough air to give it some shape. This will make it both easier to fit and less likely to get pinched under the bead when you reseat the tyre – this is important because pinched tubes will tend to explode when you try to inflate them.



4

Tube goes in

Once again standing above the wheel push the valve through the rim at the top of the wheel, taking extra care to make sure it is straight. Working your way round the wheel, push the partially inflated inner tube into the tyre cavity, using your hands to ensure it is evenly distributed with no twists or kinks. If you're not working against the clock, it's worth spending a little more time on this bit to make sure the tube is properly inserted before you try to re-seat the tyre.



TIME TAKEN: 1 MIN
WORKSHOP SAVING: £5



5


Fingers of steel

With the wheel still on the ground, pop the first bit of the tyre back onto the rim at the top of the wheel using your fingers. Continue working the bead into place evenly around the rim until just over halfway. Then pick up the wheel – it's easier to get the last section of tyre over the rim using the palm of your hand. If you can't get the final bit on, return to the start and wiggle the tyre back and forth to ensure it's seated properly – this should create some additional slack.



6

Apply some pressure

Once the tyre is in place, return to the valve. As the rubber is thicker where it joins the body of the inner tube, this area can often get caught between the rim and tyre. Push the stem upwards into the tyre cavity to ensure this isn't the case. To beat a minute you're going to need some technological assistance in the form of a CO₂ inflator. If you've got it right, you'll almost be ready to roll; if not, the loud bang as you discharge its contents will let you know. 

Don't believe it can be done inside 60 seconds? Head on over to our facebook page to see the video. If you think you can beat a minute, upload your attempt and see where you come in our leaderboard.
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FAT LOT OF GOOD

Keeping lean is a handy by-product of riding. For those who take their cycling seriously though, body fat percentage is another stat to obsess over. But how low should you go?

During the 2009 Tour de France, some reports had Sir Bradley Wiggins' body fat percentage as low as 4%. In an effort to morph from time-triallist to yellow-jersey contender, Wiggins shed the equivalent of six bags of sugar. 'Losing that weight is all I can do to give myself the best chance on the climbs,' he said. Ultimately it paid off as Wiggins finished fourth – revised to third after Lance Armstrong was struck from the Tour's record books – progressing to victory in 2012. Before you start laying off sugar in your tea, bread and biscuits – as Wiggins did – let's have a look at what body fat really is.

'You should think of body fat in two ways,' says Laurent Bannock, director of nutritional

consultants Guru Performance. 'How much is functional and how much is dead weight?' Functional means offering a benefit, and body fat does that in abundance: it absorbs and stores fat-soluble vitamins A, D, E and K, resulting in a stronger immune system and improved blood clotting; it insulates against the cold and generates heat; and it protects organs and bones from injury.

Of course, fat also stores energy for tissue, metabolism and muscle. In fact, each pound (454g) of body fat preserves approximately 3,500 calories, so if a person weighing 68kg (10st 10lb) with 10% body fat has 6.8kg of stored fat, that means they're storing over 52,000 calories. It's why even the most lithe cyclist can spend much of a race burning fat

without detriment to their performance or health.

'That's why it's dead weight you have to cut,' says Bannock. 'This is the excess that's clearly seen looking in a mirror. Not only do you need more power to move that extra weight, but a bulbous middle makes achieving an aerodynamic position that bit trickier, too.'

So what's a good body fat percentage? 'The optimum is 8-12% for recreational cyclists but you have to be realistic,' says

Bannock. 'A lot depends on your genetics.' And your sex. An obvious example being that women naturally carry more body fat than men. 'Where you store fat is also important,' adds Bannock. 'If it's below your centre of gravity [COG], that's less of an issue on a bike. But the more you carry north of your COG, the harder it is to propel.'


Gravity plays a role on climbs, of course, as testified by Wiggo's shrinkage. For an elite rider like Wiggins, losing 1kg of body fat can knock around 6 seconds off a flat 40km time trial for the same level of effort. However, if he covered the same distance with an uphill gradient of 5%, that improvement would swell to 55 seconds.

TRAINING AND FUELLING

Everyone has an optimal training intensity for fat oxidation – known imaginatively as 'fatmax'. For trained riders this is around 70-75% of max heart rate. For untrained riders, the figure is more like 60-70%. Evidence shows that the longer you train, the more important fat becomes to fuelling, so fat-burning is increased with fewer longer sessions than many shorter sessions. If losing body fat is your target, it's better to ride three times a week for an hour than six times a week for 30 minutes.

As for nutrition, Bannock recommends periodising what you eat. 'This means that on more active days, you should eat more carbohydrates,' he says. 'On less active, go for fewer carbs. To keep it simple, eat roughly the same amount of protein, fat and fibre whether you're active or resting.'

So on more active days, this might mean adding a bottle of sports drink, which, in the case of a 380ml Lucozade, is 266kcal of carbs, and a MuleBar (201kcal for Mango Tango version) for an extra 467kcal, but otherwise keeping your diet the same as non-riding days.

For most recreational riders, losing body fat will result in a faster performance and more Strava segment PBs. But remember that lower isn't always better. Try to follow Froome and co, who have the benefit of many hours of rest and recovery, and you'll end up fatigued and ill. It's nice to climb faster but not to the detriment of your health. 

BODY FAT IN NUMBERS

67.1%

UK males classified as overweight. The figure is 57.2% for women.

0.5kg

Healthy weight loss per week, which works out as...

3,500kcal

Deficit over the week, which equates to...

500kcal

A day. So in other words...

2,000kcal

Per day for seven days rather than, say, 2,500kcal per day. Lose from calorie-dense and nutrient-light foods.

50%

Amount of your plate that should feature vegetables or salad. It'll satiate your appetite and fill you with antioxidants.

HI-EX EXCEPTIONS

So if fatmax is your optimal rate of fat oxidation, why doesn't everyone ride around at 65% of their maximum heart-rate (maxHR)? Let us explain...

If you exercise at 65% of your maxHR for an hour, burn 600kcal and 50% of those derive from fat, you'll have burnt 300 fat calories. If you work at 75% of your maxHR for an hour, burn 800kcal because of the extra effort but only 40% come from fat, you'll have still burnt 320 calories from fat.

So working harder can actually burn slightly more fat than your

fatmax number. But working at that level isn't for everyone: if you're not used to high-intensity training, this might leave you too fatigued for your next session.

If skipping rides through fatigue racks up, inevitably you'll end up packing on the calories and never reach your body fat goals. So go slow, unless you feel pro.

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PLATFORM FOR SUCCESS

Moving up to clipless pedals isn't simply a badge of honour – mastering the cleat offers myriad performance rewards, so prepare to engage

You're indoctrinated from an early age that red means danger; that red means stop. It's a societal norm that flows from your conscious to subconscious, ensuring – for most cyclists – stopping at a red traffic light becomes as automatic as blinking. Until, of course, you're learning to use clipless pedals. Suddenly, your reflex reaction to stop mutates into blind panic, hoping you can get your feet unclipped and to the floor quicker than gravity does its thing and brings you – still attached to your bike – crashing to the ground, seemingly in slow motion.

The speed of the very public fall means all that's ever dented is your pride but it needn't be so. With a little bit of practice, you can forge a happy and productive relationship with your clipless pedals. And from a performance perspective, it's certainly worth putting in the effort.

'With toe-clips there will always be a degree of slippage and therefore a certain amount of wasted energy,' says Sulis Scorpions Youth Cycling Alliance head coach Eugene Kertzman. 'But by using clipless pedals, you'll keep your foot in a relatively fixed position, which will maximise the power that comes from your legs through to the pedal.'

PEAK POWER

As well as reducing the amount of energy wasted, that maximising of effort is also down to the activation of more muscles. When your foot is clipped to the pedal, you're more inclined to exert power through the entire pedal stroke rather than simply expending all your propulsive efforts pushing down.

You'll naturally use your hamstrings more to lift through the back half of the pedal stroke, seamlessly transitioning to the quadriceps as your foot rotates and goes back into a downstroke.

THE IMPROVED POWER TRANSFER WILL RESULT IN MORE EFFICIENT PEDALLING, SO YOU CAN RIDE FASTER FOR LONGER

To get a similar efficiency from toe-clips, you'd have to tighten the straps to such an extent that you'd soon be unable to feel your toes. It's not just about performance, either: if you're so inclined once mastered, you can unleash your inner Sagan and showboat the bunny hop – again, something easier to do with clipless than toe-clips.

Despite the different models on the market, each essentially follows a similar concept. To the sole of the cycling shoe there is bolted a plastic wedge known as a cleat, which slots into the pedal. A spring-loaded locking mechanism within the pedal allows the rider to lock the cleat with

a pushing down action, and unlock it with a simple twist of the shoe.

Again there are variants, with Look's top-end Kéo Blade replacing the traditional coiled wire with a carbon leaf spring, while Speedplay integrates its spring-loaded mechanism into the cleat rather than the pedal.

In fact, French manufacturer Look is credited with helping clipless pedals take a foothold in professional cycling in the mid-1980s, after applying ski-binding technology. However, archives show that the principles of clipless derived way back in 1895 by an American chap named Charles Hanson, who came up with the idea of twisting your foot to release it from the pedal. Spare a thought for Charles every time you approach those aforementioned traffic lights.

ONESIDE OR TWO

Whether you choose Look over its competitors is often down to experience or ambition. Look's larger pedal base spreads the force load over a wider area which reduces the chances of foot and knee injury. However, you can only clip into one side of the pedal. 'That's why I'd recommend double-sided pedals for beginners,' says Kertzman. 'They originally came from mountain biking but I do a lot of road riding with my SPDs [Shimano Pedaling Dynamics; the classic two-sided design]. Not only are they great for pedalling, but you can also walk

in them as the recessed cleat is less likely to wear than the protruding Look alternative.'

You can also choose models that offer a clipless/platform combination, such as Shimano's PD-M324, which means you can either ride in your bike shoes or casual shoes. And there's even a product from American start-up Fly Pedals that clips into your clipless for leisure/pub riding.

In your search for the perfect platform, you'll also come across the term 'float'. A floating-pedal system allows the foot to rotate more or less at the ball of the foot, right over the centre of the pedal, while remaining clipped in. This means the rider can more easily find their natural position while pedalling, reducing chances of knee problems, though too much float can come at the expense of stability. You can also adjust the spring tension of some pedals depending on your float preference.

Fixed pedals, however, allow no rotational movement of the foot once the cleat is engaged. These are primarily designed for more experienced riders who are comfortable with their riding style and cleat position.

Whatever style you choose, acclimatising to clipless pedals is easier than you may have heard and the improved power transfer will result in more efficient pedalling, meaning you can ride faster for longer. Like anything else, to build your confidence, you need to put in the practice. And watch out for those red lights.



POSITION OF CLEAT

Pedal manufacturers give detailed instructions of how to set up your cleats. But for a broad overview, we've turned to British Cycling (britishcycling.org.uk)

1

With your feet in your shoes, feel along the inside of your foot for the bony protrusion at the base of your big toe. Mark this position with a pen. Do the same with the outside of your foot for protrusion at the base of your little toe.

2

Remove the shoe and draw two parallel lines across the bottom of the shoe. The first straight across from the first mark; the second from the second mark. The midpoint between these two lines represents the fore and aft position for the centre of the cleat.

3

Position the cleat in the middle of the shoe based on this position. This is your neutral set-up. If your toes noticeably point out or in, slightly rotate your cleats to allow for this.

4

Once clipped in, float will help you achieve your perfect position. However, if, for example, your heels are catching the crank arm, you'll need to adjust the cleats. In this case, by moving the cleats towards the bike to move your feet away. 🚲

YOU PUT YOUR LEFT FOOT IN...

CYCLING COACH EUGENE KERTZMAN EXPLAINS HOW TO MAKE THE TRANSITION TO CLIPLESS PEDALS...



- 1 Slide the front of the cleat under the catch on the pedal.
- 2 Press down hard with your heel - you should both hear and feel the engagement.
- 3 Release your foot by twisting your heel out to the side.
- 4 Your foot is free; place on the floor to avoid a slo-mo crash.

Look was the first to apply step-in ski-binding technology to bikes in 1984 and since then clipless – or more accurately, clip-in – has become synonymous with professional cycling. Making the transition isn't easy and as cycling coach Eugene Kertzman explains, taking time to practice can save you the embarrassment of the 'slow topple' on the road.

'The best way to start is leaning against a wall,' Kertzman says. 'Lift one pedal up and, with the opposite foot on the ground for stability, clip in your raised foot with a swift motion. Then unclip with a twist and

put that foot back on the floor. Do this 15-20 times to ingrain the movement in your mind before repeating on the other leg.

'Once you're confident, repeat but without the wall. You can then progress to a quiet grassy area and do the same but this time cycling off with your clipped-in leg and then clipping in with your other. Slow down, unclip one foot, stop, put your unclipped foot down and then unclip the other foot. Once you've mastered it on that surface, try your new skill out on a quiet road but avoid junctions or hazards. Well done, you've now joined the clipless elite.'



MIND GAMES

To achieve your goals, muscles aren't the only part of your body that needs training. Top riders also tune up their brain to maximise chances of success

I get in the zone by visualising the race. When I was a kid, I wasn't just riding the roads around the Isle of Man, I was imagining riding the roads I'd seen on television. I still do that now.' These are the words of 'Manx Missile' Mark Cavendish on how he integrates visualisation – aka mental imagery – into his race preparation.

The British Association of Sport and Exercise Sciences defines mental imagery as 'to mentally rehearse skills without executing the movements involved'. In other words, by imagining a situation as realistically as you can, the brain responds in a similar fashion to if you were facing that competitive situation. Before you start getting ideas about training without actually having to get on your bike, mental preparation still requires a bit

of work, key being that it's a sensory, immersive process.

'Visualisation is most effective when activating all possible senses,' says Dr Martin Turner, lecturer in sport and exercise psychology at Staffordshire University. 'How does it feel to ride well? What are the sounds that are

synonymous with your performance environment? Does your racing gear have a particular smell that you can recreate? The more realistic you make the visualisation, the more effective it will be in activating the brain regions.'

Evidence that visualisation works is surprisingly large. Noted expert on the subject Aymeric Guillot of Claude Bernard University in Lyon conducted a study using functional magnetic resonance imaging (fMRI) to show that movements – whether actioned or imagined – recruit similar neural pathways. 'In other words, by visualising a movement, a similar area of the brain is activated as when you actually

move,' says Ian Robertson, professor of psychology at Trinity College Dublin. 'The primary difference between imagined and real movement comes in the final motor output stage of skill execution.'


VISION ON

So what does this mean for the recreational rider? For starters, just because you can visualise yourself smashing it at the RideLondon-Surrey 100, that doesn't mean fantasy is enough to lead you to victory. What it does mean is that reconnaissance becomes a vital part of your race preparation.

'Course recce is vital,' says Turner. 'When you ride on the day, the brain should already have experienced those key turns and potential course issues via imagery.'

However, rather than recceing the whole 100-mile course and re-living it in your mind's eye, focus on parts of the course that will determine your outcome. So make note of areas like hairpins or steep descents and imagine yourself conquering these sections. Physically checking out the course is the ideal but often that's not viable – for example, if you're racing abroad. That's where Google Maps and YouTube come in handy.

You can also imagine a place or performance that you're particularly proud of to stimulate feelings of confidence. 'For example, on an approach to an incline, you may imagine back to a previous similar incline where you felt good,' explains Turner. 'This recreates positive feelings.'

Just like physical skills, visualisation can be difficult to master. 'Dedication is required to learn how to use it,' says Turner. 'In the beginning, just five minutes a day is enough. Then, as you become more skilled, try doing it a bit longer and in more detail.' Now, follow the steps in the visualisation masterclass (right) and you'll soon build the confidence to imagine – and action – a faster you. 

SEEING IS BELIEVING

Dr Martin Turner prescribes this five-step plan for visualising your future victories

1

After a training ride, find a quiet place where you won't be disturbed. Remain with your bike and grip your handlebars as you normally would when riding.

2

Take 10 deep breaths and focus on the feelings of relaxation between each breath. Count five seconds on inhalation and five seconds on exhalation. Wait until you're relaxed before moving on.

3

Close your eyes and picture a course scene in front of you, the road passing underneath you. Feel the wind on your face and hear the sound of air rushing past.

4

Now, picture any parts you're worried about – a steep climb or a fast descent. As you visualise riding these, you feel in complete control. You are exhilarated but confident in your ability to tackle them. You feel nervous but in a good way. You are looking forward to taking on this challenge.

5

As you come out of the hazard, recognise your successful execution and look forward to the next. Repeat steps four and five 10 times.

'WHEN YOU RIDE ON THE DAY, THE BRAIN SHOULD ALREADY HAVE EXPERIENCED THOSE POTENTIAL COURSE ISSUES'



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THE ED MASTER

It isn't just his height that has Ed Clancy towering over cycling – the JLT-Condor rider is Olympic and European team-pursuit champion. Here's the low-down on the British track legend



PROFILE

FULL NAME:
EDWARD 'ED'
CLANCY MBE

AGE: 30

HEIGHT: 1.86m

WEIGHT: 78kg

HOME:
NEWTON-LE-WILLOWS,
MERSEYSIDE

TEAM:
JLT-CONDOR

TWITTER:
@ED_CLANCY
(FOLLOWERS: 36,700)

3:51.659

THE MEN'S TEAM-PURSUIT RECORD

SET BY CLANCY, STEVEN BURKE, GERAINT THOMAS AND PETER KENNAUGH OVER 4,000M AT THE LONDON OLYMPICS, 2012



Ed really likes cats. So too does Mark Cavendish, who named his ginger moggy after Ed



Clancy rides for JLT-Condor, the highest ranked British squad at UCI Continental level. Team-mates include Kristian House and Felix English.

5

WORLD
CHAMPS
TITLES

6

TOUR
SERIES
VICTORIES

3

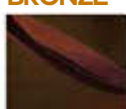
TOUR
SERIES
OVERALL
TEAM
VICTORIES

2

OLYMPIC
GOLDS

1

OLYMPIC
BRONZE



B E S T R E S U L T S

Clancy puts his 2014 breaking of the Madison time-trial record (with JLT-Condor team-mate Ollie Wood) to Manchester's famous weather. "It had been thundery that week," he says, "which lowers the pressure in the velodrome and means faster times."

15

The age at which Clancy joined the British Cycling Academy. He was part of the first group of riders to do so, which included Mark Cavendish and Geraint Thomas.

MAN ONE

In the team pursuit, it's the role of the lead rider to get the team up to their average speed as quickly as possible. The team owes much of its recent success to Clancy's unique combination of speed, strength and endurance that make him the perfect man for this job. 🚴





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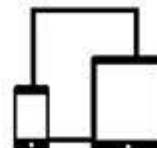
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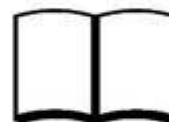


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ON TEST



BEACON BF_80
£3,399



GURU PHOTON V4
£3,050



STORCK SCENERO G2
£2,729

FLAT OF THE LAND

Dripping with exclusivity, the Beacon BF_80, Guru Photon V4 and Storck Scenero G2 represent the affordable end of luxury. Soon to be dripping wet, our road-racing rarities battle the sea spray, salt and downpours of Alan Partridge's north Norfolk coast

WORDS **MARC ABBOTT** PHOTOGRAPHY **GEORGE MARSHALL**

THE TORTURE SPIKE



THE GREAT EVANS CYCLES TRADE-IN

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and get up to £250 off a shiny new bike

ENJOY THE RIDE

Crabs. Crabs, and Alan Partridge in an air-rifle showdown. Until today, these were the biggest talking points of the north Norfolk coastal town of Cromer. But the locals hadn't banked on us three unloading nearly ten grand's worth of high-end road bike technology from *BikesEtc*'s car on a bleak, misty morning in March. Yep, that one raised some eyebrows.

'This lot's going to get a bit wet' – my first private thought, as front wheels are slotted into fork dropouts, seatpost heights measured and finer points of set-up dealt with, before we head to the nearby public lavatory to get changed. The lack of glamour in the situation is far removed from the luxuriously appointed trio of road bikes assembled.

As we roll out towards the seafront, a little part of me – despite the sea mist (or is it rain?) – is relishing the prospect of this ride. Of the three bikes, I'm sitting on Beacon's BF_80, a sports bike that typifies our fleet. It oozes class, from its deep white and red paint to the full Campagnolo Chorus groupset. And I've never seen one on the road. The bikes we're riding today are the Lexus CT 200h



Take the low road: Norfolk has sea views, wildlife (of sorts) and spectacular calorie-recharging points



THE ROUTE

DISTANCE: 85km **CLIMBING:** 729m

TIME: 3-4hrs

Leave Cromer, heading due west on the A149. Continue on this road, through Weybourne and Cley next the Sea, until you reach Wells-next-the-Sea (1) (keep the coastal marshes to your right and you can't go wrong). Take a right turn after 35km, as you enter Wells, on to the B1105, to take a short ride to the harbour (Wells Deli comes highly recommended as a coffee stop). Heading west again from the harbourside, pick up the A149 once more, turning left just outside the town

boundary; 2.5km later, continue straight on to the B1105 (rather than taking the A149 back into Wells). After 6km, take a left at the crossroads in Egmore, then right at the T-junction in Little Walsingham (2). Turn left on to Holt Road, then take your first left, following quiet lanes for 6.5km to Binham (3). Stay on this road to Letheringsett, then to Holt (4), turning left at the top of the hill in Holt (towards the shops). From here, it's a rolling road all the way back to Weybourne, from which point pick up the A149 and retrace to Cromer. [strava.com/routes/1552377](https://www.strava.com/routes/1552377)





BEACON BF_80

A firm ride, if a touch heavy, but assured in the wet

Summary

Willing, agile, satisfyingly stiff and no slouch when the road starts rolling, the Beacon has the makings of a bike fit for all-dayers, chaingangs and rapid training rides. Although Marc (on this bike) missed the selection for the breakaway (the 'admiring the Norfolk countryside' defence), the BF_80 was an amiable companion for the five-mile solo slog back to Cromer with heavy legs. We chose a 53cm frame size for our 1.71cm rider.

Best points

The full Campag Chorus groupset works excellently – ergonomically placed hoods and carbon rear mech mark it out as something special. The Fulcrum Racing Zero wheels our test bike came with (£600 extra on the base price) are light enough for most applications, and spin up rapidly, while the Conti GP4000 rubber didn't slip once. And it was slippery out there.

Worst points

Although it's eager to smash hills with a run-up and uses a compact chainset, we've ridden lighter bikes. The width of the bars were on the narrow size, and we could have comfortably gone up a size for a better fit. Also, the Prologo saddle caused chafing during a long, wet day.

Price £3,399

Frame Beacon Road Super Sport carbon-fibre, carbon fork

Wheels Fulcrum Racing Zero

Tyres Continental GP4000 25c

Groupset Campagnolo Chorus 11-speed, 50/34 chainset, 11-25 cassette

Brakes Campagnolo Chorus

Handlebar Deda Trentacinque

Stem Deda Trentacinque

Seatpost Beacon carbon

Saddle Prologo Kappa Evo T2.0

Contact beaconfell.com



Rating



OVERALL

8.5
10



(the Japanese Mercedes) of the bike world – rarely spotted and temptingly affordable with the help of a credit card, rather than a second mortgage.

With the stem at its lowest possible point on the steerer, the BF_80 is allowing me to get low and aggressive on the rolling roads that head west along the coast from Cromer. 'Rolling?' I hear you ask. 'But this is Norfolk...' To our surprise, when checking our route, we discover there's more than 700 metres of climbing to be done in England's flattest county today.

Andy and Ross ahead, on the gloriously exclusive Canadian Guru Photon V4 and German Storck Scenero G2 respectively, set the pace as the coastal route flattens. Tucking in behind, but far enough back to avoid spray from Andy's rear tyre, I take in the view of coastal marshland and men in camouflage suits; I swear I can hear the distant sound of quacking. As short climbs kick up, all three of us are able to dispatch the roads in the big ring.

It helps that two of these bikes have compact chainsets. Andy's Guru is the only machine here to employ a standard 53/39 double. Both the Guru and Storck are wearing full mechanical Ultegra groupsets (electronic gears aren't the norm

on bikes of this price; that's where your extra cash goes when you buy a five-grander). With a light wind on our backs, a few seconds out of the saddle are all it takes to whip up a rise. Riding at pace on bikes this sumptuous is a joy, regardless of the weather. And that's what you want of a bike when you're spending this much money on it – something that makes every ride a luxurious experience.

Broad strokes

I can feel my socks squelching in my shoes. Little more than a third of the way into our ride, the rain is hammering down as we near Wells-next-the-Sea. We've earmarked the fishing town as a likely place to stop for coffee, and it's here that we set up shop in the Wells Deli for next to 90 minutes, to dry gloves on the radiator and drip rainwater from our shoes' sole vents onto the nice clean stone flooring. It's one of those moments where you

Knowing me, knowing Guru: re-tracing Alan Partridge's Alpha Papa steps was an intrinsic element of the tour



CHECKING OUR ROUTE, WE DISCOVER THERE'S MORE THAN 700m OF CLIMBING TO BE DONE IN ENGLAND'S FLAT COUNTY

by our carbon frames, even if the bars on the Beacon are a little on the vibey side.

Each of Beacon's bikes is made to order and can be specified with a number of seat, wheel and groupset options. Beyond adding to the exclusivity of owning one, this allows personal tastes to be indulged, rather than opting for the usual in-house finishing kit you're stuck with on most bikes.

What's striking most today is just how well the BF_80's Campagnolo Chorus groupset is performing, even in the wet. In fact, especially in the wet. A brief discussion about the relative merits of disc brakes earlier in the day makes me hypersensitive to the performance of my brake blocks. Pressure is easily modulated and relatively sensitive – perfect for a day like this – and I've enough confidence to keep my fingers away from the levers on the few steeper descents we encounter as the road rises inland to Egmore and heads eastward to Letheringsett.

Stopping to have a drink and photograph the bikes, all three of us take time to assess them. It's telling that some of the most scathing remarks are set-up related. We're nit-picking and although that level of criticism is part of bike testing, it's usually accompanied by broader negatives.

Ross isn't too keen on the look of the Storck's non-tapered head tube, but it's purely an aesthetic observation. Andy has issues with the reach to the bars, but with time, you could either adjust the position of the

arrive at a coffee stop with a story to tell, but the patrons of the café give us three sodden cyclists a wide berth.

Emerging into thankfully light drizzle after we've almost exhausted supplies of flat whites and Oreo cookie stacks, we ride along the harbour wall, hopping grass verges and descending kerbs to negotiate the footpath. By now, Andy's hugging himself and shaking uncontrollably. Welcome to Norfolk.

It's time to up the pace and raise our core temperature. As we put the hammer down leaving Wells, what opens out over the next hour is a network of well-surfaced and quiet B-roads and lanes. Even when the tarmac is pockmarked, the buzz is taken out of the ride



DRESS FOR SUCCESS

Kit yourself out for changeable (or downright Belgian) weather

■ JACKETS AND JERSEYS

Water-resistance is a must. Opt for a softshell such as the Mavic Cosmic Wind Jacket (£170, mavic.co.uk), plus a packable rain jacket, like Castelli's Sottile Due (£75, saddleback.co.uk). If it's not too cold, Rapha's short-sleeved Pro Team Softshell Base Layer (£80, rapha.cc) can be worn under a regular jersey, allowing you to display team colours – for more, see page 103.

■ GLOVES

Ever tried holding handlebars with cold, numb fingers? It's unpleasant. Cover your digits with a warm, leakproof glove – Castelli's Diluvio Deluxe (£40, saddleback.co.uk) was recently seen on the hands of the MTN-Qhubeka pro team.



■ SHOE COVERS

Keep the elements from your feet with a full-on neoprene over-shoe, such as the Bioracer Windblock Easyfit (£36, bioracer.co.uk) or a lightweight, aero, waterproof cover such as the VeloToze Tall (£15, velobrands.co.uk).





GURU PHOTON V4

Light, agile and in a hurry – but great value



Summary

Admittedly, Ross (riding the Storck) hadn't been told we were racing for the Cromer sign, but when Andy (Guru) launched a blistering attack up the final rise, he opened a gap to claim the title King of the Crabs. Such was the victory, he even had time to proffer a crab-claw victory salute to amazed locals. The Photon is fast and had been urging us to test our legs from the start. When the weather got bad, it hurried us to a coffee stop, and when the roads dried, it prompted dreams of Strava KOMs. It's fun, impressively engineered, at a reasonable price. Our 1.77m rider used a size M, with a 555mm top tube.

Best points

The Photon V4 is stealthy but still stands out from the crowd and is good value given that it comes from such an illustrious stable. It's light, stiff and rides superbly.

Worst points

The Ritchey bars add a couple of centimetres' extra reach to the position in the hoods compared to more traditionally shaped bars. We could have used a shorter stem than the supplied 110mm to compensate.

Price £3,050

Frame T700 carbon-fibre,
Guru carbon fork

Wheels Shimano RS21

Tyres Hutchinson Equinox

Groupset Shimano Ultegra
11-speed, 53/39 chainset,
11-25 cassette

Brakes Shimano Ultegra

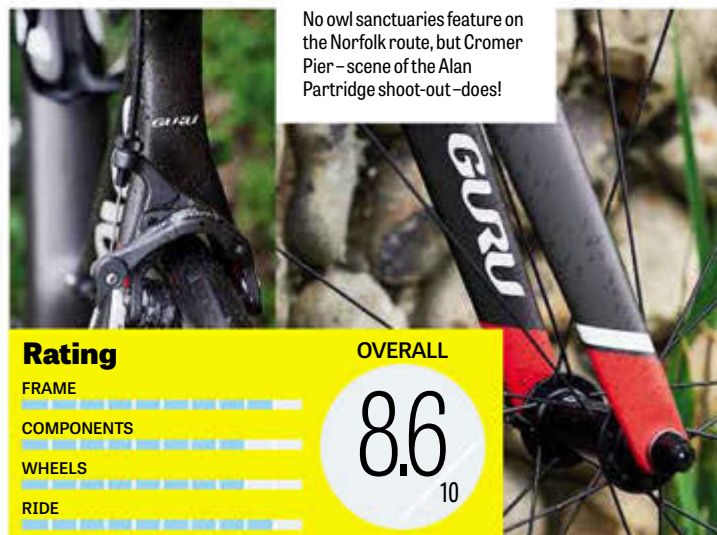
Handlebar Ritchey WCS

Stem Ritchey WCS

Seatpost Ritchey WCS

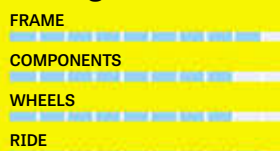
Saddle Prologo Nago Evo T2.0

Contact mosquito-bikes.co.uk



No owl sanctuaries feature on the Norfolk route, but Cromer Pier – scene of the Alan Partridge shoot-out – does!

Rating



OVERALL

8.6
10



STORCK SCENERO G2

Pace-setting performance and confident on the bends

Summary

The Storck is as comfortable riding to the coffee stop as it is leading the breakaway group. It was compliant on the road and eager when riding out of the saddle, and what it lacks in style, it makes up for in substance. The bike can't be criticised for not predicting the final sprint for the Cromer sign (the rider should have known better), but it was certainly more than happy to set the pace for miles, making the Storck a reliable performer. We chose a 55cm frame for our 1.73m rider.

Best points

The long, low geometry gives a nod towards the racer, but despite the long top tube, the Storck still provided a comfortable position for all-day riding. The Schwalbe tyres inspired confidence, and the Ultegra groupset, which performed faultlessly, is also a plus.

Worst points

The non-tapered head tube. While this omission didn't affect performance, the larger diameter would visually complement the oversized proportions of the frameset better than the regular head tube.

Price £2,729

Frame Unidirectional carbon-fibre, Stiletto Aero carbon fork

Wheels DT Swiss R23

Tyres Schwalbe One 25c

Groupset Shimano Ultegra 11-speed, 50/34 chainset, 11-25 cassette

Brakes Shimano Ultegra

Handlebar Storck carbon RBC220

Stem Storck alloy ST115

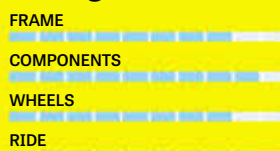
Seatpost Storck Monolink MLP150

Saddle Selle Italia SLS Monolink

Contact storck-bicycle.cc



Rating



OVERALL

8.3
10

hoods and re-wrap the bar tape, or take Guru up on its frame-only option and specify your own finishing kit. The worst I can say about the Beacon is that the bars are noticeably narrower than I'm used to and that's causing some comfort issues in my upper back. (I've not told anyone how the state of my saturated chamois is affecting my comfort below the waist. I just assume everyone's in the same boat.)

What becomes clear over the next few miles is that these bikes are bringing out the need for a tempo ride. They all encourage rapid progress through varying combinations of lightness, stiffness and slick operation of their components. Changing up a gear under load as a climb unexpectedly levels out? No clattering of rear mech and chain involved. Changing up in short order to contest a sprint for the next road sign? Shifter operation is rapid, fluid; lightweight wheels get up to speed in no time.

Back of the net

Nowhere is the quality of these bikes more evident than when we emerge from our rural retreat to join a busier A-road, to climb up to the town of Holt before jumping off the holiday-makers' route once more. A punchy incline rises 50 metres or so, forcing us all out of the saddle. I might have lost the puncheurs' wheels in front but the rise isn't a bind. It becomes one of those glorious moments on a bike when you're perfectly happy with the world.

All my concentration is on trying to latch back on to Andy and Ross. I'm high up in the little chainring and my quads are staring to feel it. But the Beacon is doing its damndest to see me up this hill as quickly as possible.

When we chose our Belgian classics alter egos at a comfort stop earlier (you've got to find some ways to stay sane on wet days) – I opted for Greg van Avermaet. Picturing the duo in front as Peter Sagan and Zdeněk Štybar, I'm hauled up the hill, playing out a fantasy on a bike that's making me forget I've spent the past few hours being bombarded with road salt, rainwater and occasional small pieces of grit from other people's tyres. It's pure cycling enjoyment, and only the promise of a hot bath would

Identity crisis: Greg Van Avermaet, Peter Sagan and Zdeněk Štybar's stunt doubles

MY QUADS ARE STARTING TO FEEL IT, BUT THE BEACON IS DOING ITS DAMNEDEST TO SEE ME UP THIS HILL AS QUICKLY AS POSSIBLE





Pincer movement: The first to reach Cromer will be crowned King of the Crabs

LIVING OUT RACE FANTASIES ON SOAKING ROADS SURROUNDED BY STUNNING, BLEAK FLATLANDS




have made me ride quicker. Four kilometres later, we're descending into the village of Weybourne, with its brick-and-flint cottages, as a group. I'm back on and imagining a chance to sit in and surprise the duo with a late attack into Cromer. Needless to say, it doesn't happen. My legs are cooked, so I'm spinning it out along the final 10km of headwind-heavy A149 coast road, retracing our wheel tracks through Sheringham and finally to Cromer seafront.

With the circuit complete, there's news of a surprise winner. Andy appears to have jumped Ross for the sprint. Living out race fantasies on soaking roads surrounded by stunning, bleak flatlands – that's what these bikes do to you. If you're willing, they're able.

Moments later, I find Andy and Ross sitting on a low wall, overlooking the beach and grey North Sea. Unclipping, slowly lowering my sore behind on to the damp, pebbledashed concrete, I take a giant swig from my bottle and call to mind the sage words spoken by Norfolk's first son as he lay dying on the very pier I can see over Andy's shoulder.

'They've blown me to bits, Lynn,' choked Partridge to his long-suffering PA. 'I feel cold. But we had some good times.'



HOW THEY STACK UP...		
		
BEACON BF_80 £3,399	GURU PHOTON V4 £3,050	STORCK SCENERO G2 £2,729
FRAME		
COMPONENTS		
WHEELS		
RIDE		
OVERALL		
8.5	8.6	8.3

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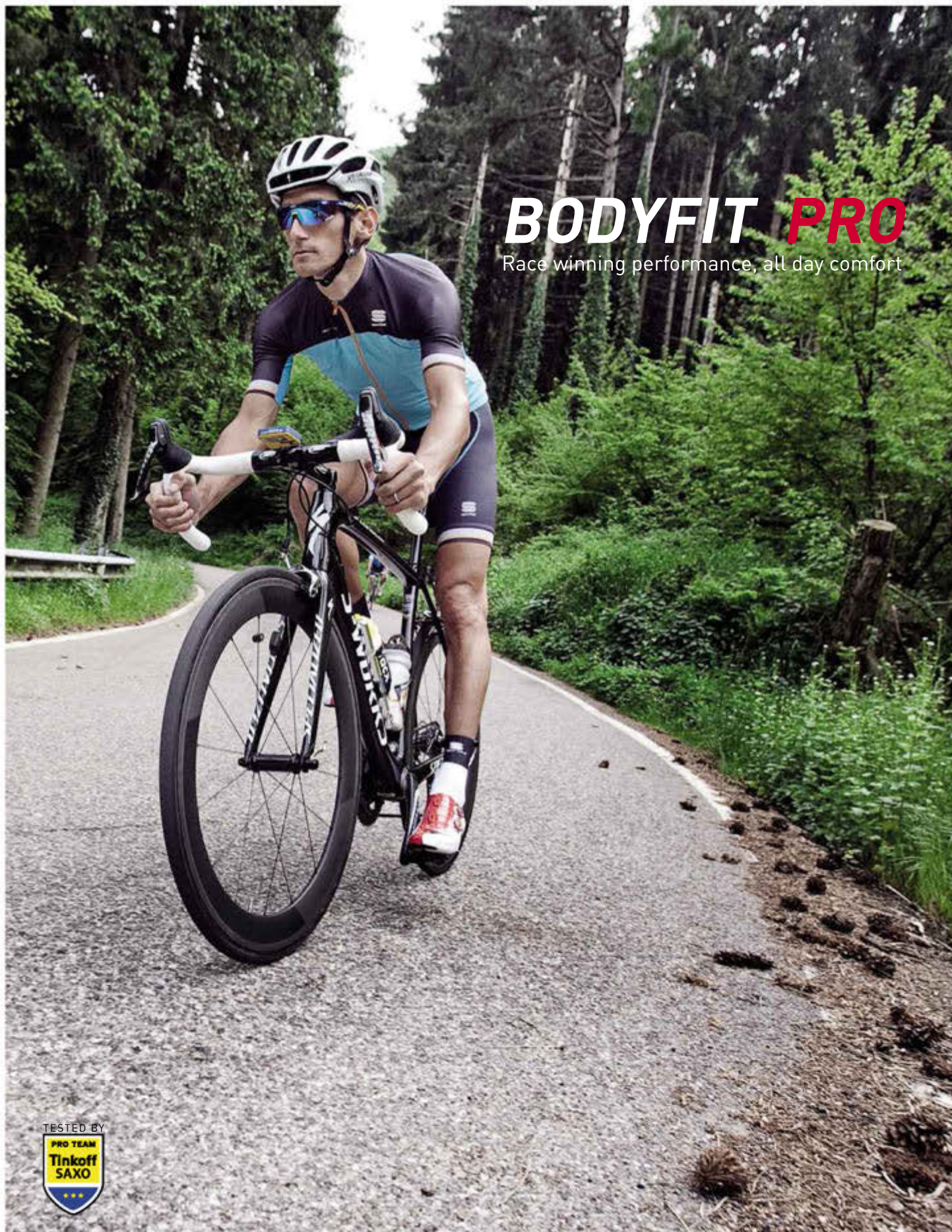


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LEARNING FROM THE PROS

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WORDS **JAMES WITTS**

PHOTOGRAPHY **RICHARD BAYBUTT**




ir Dave Brailsford's aggregation of marginal gains turned professional cycling on its head. For a sport steeped in its history of suffering and 10-hour training rides, paying attention to areas like fatigue management, training intensities

and nutrition was almost seen as blasphemy. Until, of course, Sky began to dominate the professional peloton. Now, all teams are proud to proclaim how they're utilising advances in sports science to stay ahead of the competition. Thankfully, for recreational riders, there's much you can learn from Geraint Thomas and co.

TRAINING BY ZONES

Key to Team Sky's success is training by power. But what exactly is power and why is it the training metric of choice? 'Power is the amount of work done per unit of time and is measured in watts,' says Teun van Erp, sports scientist at Giant-Alpecin, whose charge, German sprinter Marcel Kittel, is reported to generate a peak power output of around 1,900W. That's enough to power six plasma televisions. 'Power's a very accurate representation of how strong a rider is.'

Calculating power by hand requires degree-level maths. Alternatively, like the pro teams and an increasing number of recreational riders, you could purchase a power meter. The gold standard is SRM, which is used by, among others, Nairo Quintana's Movistar and Alberto Contador's



Wind tunnel testing is used by the pros to finely hone their riding position and equipment for maximum aerodynamic benefit. It's expensive but the gains make it worthwhile

MARCEL KITTEL GENERATES A PEAK POWER OUTPUT OF 1,900W - THAT'S ENOUGH TO POWER SIX PLASMA TVs

Tinkoff-Saxo. The SRM calculates wattage by measuring the strain on the crank acting on the chainring. There's also the model used by Team Sky - Stages - which measures force on the left crank arm, then doubling it for an overall figure. Giant-Alpecin use Pioneer, Cannondale-Garmin the Garmin Vector... You get the point - they're omnipresent.

Key to training by power is understanding your functional threshold power (FTP). 'That's the maximum power output you can hold for an hour,' explains Daniel Healey, head of sports science at Tinkoff-Saxo. 'Although we tend to test the riders over 20mins and reduce that figure by 5%.' Training all-out for an hour can have a detrimental impact on the quality of previous and subsequent training. Not only can regular assessments of FTP



PRO BUYS

NATURAL FUEL

Fed up with sickly gels and powders? Try some of nature's superfoods instead

**Coconut water**

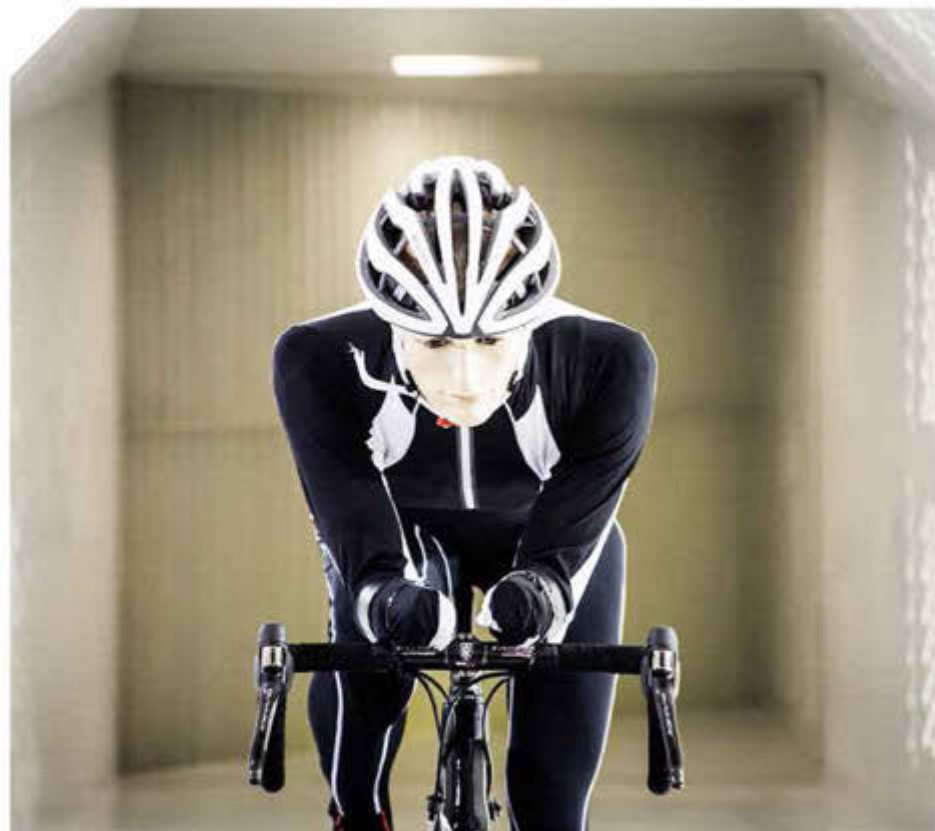
God's own isotonic drink, supplying many of the benefits of energy drinks but in their natural form. Electrolytes include calcium, magnesium, phosphorous, sodium and potassium to keep you hydrated and metabolic processes working efficiently. Team Sky add coconut water – albeit only 0.5% – to their gels and smoothies. Marginal gains and all that.

■ **Coco Pro**, £2.75 for 330ml, ocado.com

**Beetroot juice**

Nitrates can lower the oxygen cost of exercise, improving endurance. Beetroot is particularly high in nitrates and many pro teams now mix it in their riders' smoothies. You need 400mg of nitrate before your event, equivalent to half a litre of beetroot juice. The easiest way is to take it in shot form – unless you *really* like your pulverised root vegetables.

■ **Beet It Sport**, £18.45 for 15x70ml shots, wiggles.co.uk



TRAINING THE HEART WAY

Endurance coach Mark Kleanthous shares six goal-specific sessions that utilize your ticker. Percentages are of your maximum heart rate (HRM).

Less than 60% HRM

BEST FOR Recovery

DURATION 10-50mins

WORKOUT This should follow a hard training ride. You need to find a flat route - or use a turbo - start easy with very little pressure on the pedals. Try to keep your heart below 60% of your HRM.

WHY Increasing bloodflow to tired muscles will help remove waste products as well as providing nutrient-dense blood to speed up recovery.

60-65% HRM

BEST FOR Burning fat

DURATION 1.5-3hrs

WORKOUT Don't be tempted to go above 65% of your HRM for the entire ride. You'll recover quickly allowing you to really put the hammer down during your harder, more important rides.

WHY Improves fat metabolism; strengthens muscles tendons and joints; you become more efficient going easy so you recover faster while cycling fast.

65-75% HRM

BEST FOR Improving VO2max

DURATION 1-4hrs

WORKOUT During your ride, unclip one leg and focus on full-pedal revolution for 1min. Repeat on other leg for 1min. Complete up to 20 times on each leg during the ride. Can also be done on a turbo

WHY You improve the ability to use oxygen; improved technique; learn to preserve energy, especially when going uphill or going hard.

75-82% HRM

BEST FOR Endurance

DURATION 45mins-2hrs

WORKOUT Start at 45 minutes and increase the duration by 5 minutes until you're riding for two hours. Ideally choose a flat route to avoid downhill sections where you get the chance to recover.

WHY Will improve the ability to sustain a high work rate over an increasing time scale by improving your carbohydrate metabolism.

82-89% HRM

BEST FOR Increasing pace

DURATION 30-60mins

WORKOUT This is great for long climbs or hanging onto the rider in front. Ride multiple loops - the ideal being 3 x 20 minutes - and make sure you complete each one in a similar time.

WHY Raises anaerobic threshold, allowing you to maintain a high pace. This highly successful method should only be performed once a week to avoid burnout.

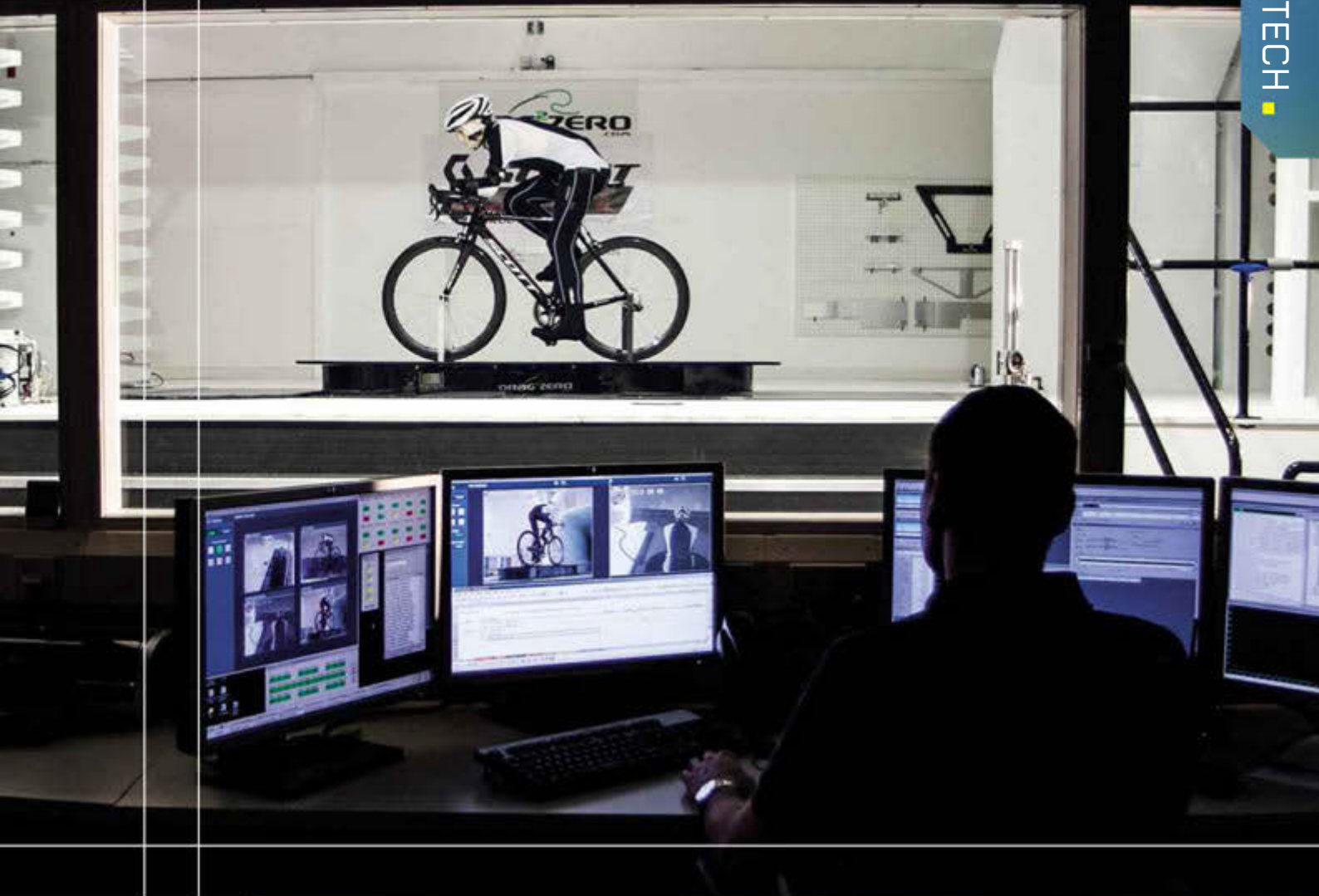
89-94% HRM

BEST FOR Aerobic power

DURATION 14-40mins

WORKOUT Find a quiet road ideally with no turns or hazards. Warm up for 15 minutes before riding at 89-94% of your HRM for 14-40mins. Make sure you have at least one day between sessions.

WHY Raises VO2max levels to sustain the highest-possible maximum power. Perfect training for coping with short-term fatigue on steep hills or sprints.



IF YOU DON'T HAVE A POWER METER, USE A HEART RATE MONITOR TO FIND YOUR LACTATE THRESHOLD

The high-tech wind tunnel facilities at Silverstone are mostly used by F1 teams but their benefits can be appreciated by bike manufacturers like American brand Scott too

gauge whether your fitness is improving, it's a good platform from which to set training zones, designed to improve different parameters of fitness depending on the time of the season. The only problem is that although power meters are more affordable than ever, you'll still struggle to get change from a grand. Thankfully, you can calculate your own training zones without one.

According to research by Professor Oliver Faude at the University of Basle, FTP correlates to an intensity that's similar to your blood lactate threshold (LTHR). This is where

you're managing to recycle as much lactic acid – a byproduct of exercising – as you're producing. 'You can recycle much of it and sit on that uncomfortable level for a reasonable amount of time,' says Healey. 'Above that and lactate starts to accumulate and that's where we hit the red zones or anaerobic zones. There's only so much work you should do in those and then only in controlled doses. Increase them slowly over several months and near your pinnacle events.'

You can determine your lactate threshold with a simple test and a heart-rate monitor (which you can buy from as little as £40). Simply ride flat out for 30 minutes but 10 minutes in, start your heart-rate monitor. Find out your average for the next 20 mins and that figure's an approximation of your lactate threshold.

'Once you have that figure, you can establish your training zones,' says bike coach Joe Friel. 'These range from zone one, which is less than 81% of your LTHR, to zone 5c, which is more than 106% of your LTHR.'

Many coaches have their different zones (see box, left) – some are simply one to five – and each corresponds to improving performance, whether it's speed, strength, stamina or technique. In Friel's case, zone one is very much for longer rides where you can teach the body to burn more energy from fat. Zone 5c is for short, intense intervals that build speed. Each varies depending on the time of year.

Tinkoff-Saxo tape a card displaying the individual rider's power zones to the stem of their bike. 'There's a line running right across the centre where each riders' threshold sits,' says Healey. 'In winter we train all points below as we're looking to build endurance. If the riders go above the line we won't be getting the adaptation we're after. That training zone is more about speed, which you need during race season. It's basically a really simple – but effective – visual reminder.'

That's something you can easily replicate with heart-rate training zones. Just go all *Blue Peter* and dig out a permanent marker, ▶



GO FOR IMPRESSIVE SPEED. **SAN REMO 76**

The cake stop has long been a traditional part of the Sunday club ride but if you want to up your game to pro levels, you should consider looking for a healthier option



THE WEIGHTING GAME

Before you splash out on a lighter bike try nutritionist Lucy-Ann Prideaux's top eating tips to lose a bit of ballast off your own frame

Find a balance

Elite riders' body fat can hover around 6-8% but they live in a permanent state of hunger. While you don't need to go that far, your daily calorie intake should be balanced against your expenditure and consist of several small, good quality meals.

Go easy on the supps

You may have more in your tank than you think. It's easy to overuse sports drinks, gels and bars and any excess sugar will be converted to fat. A long, morning ride could end up adding pounds around your waist as well taking them out of your pocket.

Break the cake habit

While it may be a club tradition, munching on an oversized muffin or slab of cake post-ride will undo all the good you've done in the saddle. Cakes - yes even the carrot variety - are empty calories. Have a banana instead and enjoy the fruits of your labours.

Get your grill on

Eliminate all processed fats from your diet by cutting out butter, spreads and oils from cooking or adding to meals. If you're trying to lose weight you really don't need the extra calories. Makes friends with your grill and flavour your food with herbs.

Ride some empty miles

Try a couple of pre-breakfast workouts, riding on an empty stomach. With no carbs to burn, your body will ramp up its fat-burning capability. A cup of coffee or green tea before riding will increase the bioavailability of your body's fat stores too.

Sellotape and, in the UK, waterproof paper.

The rise in power-meter use has conjured up huge amounts of data, with analysing and coaching software TrainingPeaks again the professional package of choice. Team Sky and BMC Racing use it, with riders uploading their ride data for dissection by coaches. The results then dictate the intensity and duration of subsequent sessions.

This collection and analysis can benefit those of you with a heart-rate monitor, too. Apps such as Strava and Garmin Connect allow you to upload your session to and see how pace and heart rate vary depending on factors like course topography. For instance, if your heart rate reaches 98% of its maximum when climbing a 100m hill, it's worth planning a weekly or fortnightly hill session and losing weight so you have less to carry.

FUELLING FORMULAS

One of the greatest advances in the professional peloton centres on nutrition.

FOR RACES
OVER 3HRS.
90G CARBS
PER HOUR
IS IDEAL

Where once Jacques Anquetil (five-time Tour de France winner between 1957 and 1964) prepared for the Tour on 'good pheasant, some champagne and a woman', the likes of Peter Sagan and Mark Cavendish are now fuelled on gels, bars and energy drink.

And despite the lucrative sponsorship deals dished out by nutrition companies to receptive pro teams, many of these nutrition

products are based on sound science. (For evidence, see the stage 18 of the 2013 Tour de France. After suffering an attack of hypoglycaemia on Alpe d'Huez, Chris Froome took an energy gel and so limited his losses - the benefits of the energy boost outweighed the 20 second penalty for late feeding.)

Numerous studies have shown consuming carbohydrate before, during and after improves endurance performance. Most recently, Canadian physiologist Trent Stellingwerff and his team reviewed 61 studies into the subject and concluded that 82% of the papers showed significant improvement in performance. Which is all well and good, but what's the optimum to fuel your performance without leaving you sick?

'For races lasting more than 3hrs, the ideal is that you ingest 90g of carbs per hour,' says Peter Hespel, professor of exercise physiology at KU Leuven university, who works with the Etixx-QuickStep team. 'However, the only way of achieving this is via a mix of glucose



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MONKEY BUSINESS

Advances in pro cycle training don't just focus on what's below the neck – the organ above it gets a workout too

Twenty years ago if you asked a pro cyclist to explain their mental strategy, you'd have got the same reaction as from a dog being shown a card trick. Can you imagine Bernard Hinault or Eddie Merckx talking about their feelings? Did they even have any? Nowadays you can't move for cyclists talking about focus, visualisation and their, er, 'inner chimp'. This change in attitudes toward training the brain as well as the brawn can be put at the door of one man and his work with Team GB during the Olympics and in particular the British Cycling Team. Sports psychiatrist Dr Steve Peters (chimpparadox.co.uk) made the headlines when both Bradley Wiggins and Victoria Pendleton spoke openly about how taming their 'inner chimps' was key to their Olympic victories.

CHEETA IN CHAINS

According to Peters, your 'chimp' is the emotional part of your brain and can dominate in times of stress.

'I use the example of a chimp as part of a model to explain in very simple terms different features of the brain,' says Dr Peters. 'You have an emotional brain that acts like a chimpanzee in that it's impulsive, aggressive and doesn't care

for the consequences. Then you've got the human part which is logical and rational and the computer part which is process driven. Unfortunately, the chimp is dominant, which is exactly what you don't need during competition. At these times you need to get the computer running which is a skill that needs to be practiced in the same way as you'd work in a gym.'

So you need strategies for managing this – the human part – to act in a logical manner when reacting to situations, which is then stored by the computer for you to access and apply a rational solution to what might seem like emotionally reactive problems. Dr Peters' techniques are outlined in his book *The Chimp Paradox* (£11.99, Vermillion) although again he's the first to admit that no two athletes are the same.

'Some sports people thrive on these pressures,' he says. 'Some don't even see them as pressures. The human side of us says that sport is all about the struggle not about the winning. The chimp says, "You're joking I'm out there to win." I'm not saying the chimp can't help us compete but as a system it's relatively unstable and the probability that it'll let you down at some point is high.'

and fructose because they enter the muscle via different transporters.'

Studies by sports nutrition expert Asker Jeukendrup showed that gels and drinks delivering the magical '2:1' formula (two parts glucose to one part fructose) offered several performance advantages over other energy products. These included greater energy delivery; increased amounts of ingested carbohydrate absorbed, leaving less in the intestine, so reducing potential of stomach upsets; and greater carb delivery also helped to improve fluid delivery, too.

Suitable products on the market include PowerBar PowerGels (27g of carbs) and Torq Gel (30g). However, before you stock up on gels, bars and drinks and start packing in 90g per hour, heed the words of BMC Racing's nutritionist Judith Haudum.

'You need to train your gut like you would your muscles,' she says. 'You should start with 30g per hour and see how you react. Then up that to 60g per hour and, again, assess the impact on performance and your gut. Try 90g, though that might be too much for many.'

Practise this gradual increase in training to boost your body's ability to handle high carb intakes but don't go over the 90g ceiling. At the 2012 Ironman Hawaii, Ironman world-record holder Marino Vanhoenacker followed


YOU NEED TO TRAIN YOUR BODY TO HANDLE HIGH CARB INTAKE

Competitive sports can bring out irrational, impulsive chimp-like behaviour and affect decision-making. Learn to channel those impulses to stay cool in the heat of the race.

a 120g/hr strategy. That's the equivalent of four gels every 60 minutes.

'He went to the lab to get tested for his possible rate of exogenous carbohydrate intake and this was rated at 120g per hour,' explains Hespel. 'The problem is, the test only lasted 3hrs in 20°C heat. In Hawaii, the temperature was over 30°C and you're on the bike for up to 5hrs.' Vanhoenacker ended up on a drip after vomiting and suffering diarrhoea on the run. 'His stomach couldn't digest all those carbs in that intense situation.'

So ignore Vanhoenacker; instead, follow Haudum's advice when it comes to timing of nutrition. 'If the riders begin with, say, a 50-80km flat section, I'd recommend two energy bars. Intensity's lower, so you can digest more easily. If the hills start to hit during the third hour, that's the time to turn to gels – one every 30 minutes should be fine.'

Of course, if artificial sugars aren't to your taste, then you couldn't get more organic and earthy than beetroot, which is now blended into many a professional rider's smoothie. The nitrates within flow into a biochemical pathway that converts them to nitric oxide. 



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BOMBER 3 BIKES

3 SIMPLE STEPS TO ATTACH



PLACE ON CAR



PUMP TO SECURE



ATTACH BIKE



High-altitude training is a key tool in modern pro cycling. The body adapts to the lower oxygen levels and the benefits stay with the rider when they return to lower altitudes.

Studies have shown this conversion has the effect of reducing oxygen cost of low-intensity exercise and extending time to exhaustion in high-intensity exercise. However, not all sports scientists are convinced.

'We tried beetroot but the results were questionable,' says Van Erp. 'We didn't notice performance benefits and many of the riders were put off by the taste.' But that shouldn't deter you as it's been reported nitrates have a more positive impact on recreational riders' performance than elites. Professor Andrew Jones and his team at the University of Exeter took 10 healthy males and had them consume one, two or four shots of beetroot juice 2.5hrs before moderate to high-intensity cycling. They found that taking two or four shots reduced VO₂ levels during moderate-intensity exercise – in other words, exercise felt easier – with two shots performing better than four, lengthening efforts by 14% and 12%, respectively. Don't worry about covering your kitchen in purple juice, though – Beet It Sport produces handy shots you can neck before riding (15x70ml shots, £18.45, wiggles.co.uk).

ALTITUDE TRAINING

While some remain sceptical about the power of root veg, everyone recognises the impact of altitude training. That's why Orica GreenEdge often go to Livigno in Italy; Team Sky head to Tenerife; and Giant-Alpecin hit the Alps. It's also why Giro d'Italia 2014 winner Nairo Quintana is God's gift to climbing.

'Quintana is an amazing rider but what really gave him an advantage was growing up and living in Colombia,' says Movistar coach Mikel Zabala. 'His parents live at an altitude higher than 3,000m.'

Most riders will hit around 1,600m or higher in search of performance gains with the lower percentage of oxygen in the



PRO BUYS RECOVERY

Always pay attention to what you do off the bike too



Hand gel

A recent tweet from Team Sky team chef Søren Kristiansen revealed a banquet of home-made rolls, smoothies and energy bars. However, the eagle-eyed may have noticed an incongruous addition on the edge of the table – hand gel. Team Sky is big on hand washing with alcohol-based hand sanitisers peppering their team bus. The reason is simple – when you're paying out over £10 million a year on wages, you don't want a small germ to stop your stars in their tracks.

■ *Nip into Boots and spend from £2*



Activity tracker

If Simon Gerrans or his team-mates at Orica GreenEdge are finding their sleep compromised by fatiguing twitchy muscles – common in long, multi-stage races – they may turn to Australian Institute of Sport expert Shona Halson. In severe cases, Halson attaches them to electrodes to monitor brainwaves and muscle activation to determine the extent of the problem. For lighter insomnia issues, she recommends using an activity tracker for two weeks to monitor restlessness before prescribing remedies such as no late-night iPad work and blackout blinds.

■ *Try a Fitbit activity and sleep tracker, from £80, fitbit.com*



PRO BUYS SPEED

Top-end kit won't turn you into Wiggo overnight but it may give you an edge



Bike

Aero bikes are essentially slightly curvier versions of standard road bikes, with streamlined aerodynamic tubing to cut through the air. The likes of Andre Greipel at Lotto-Soudal use Ridley's Noah SL. But at well over £5,000 for the fully kitted-out version, it's prohibitive to most. Cheaper options out there include BMC's Timemachine TMR02 at nearly half that price. And it's a *BikesEtc* Best in Test winner to boot.

■ **BMC Timemachine TMR02**, £2,600, eveanscycles.co.uk



Helmet

At the 2014 Tour de France, 17 of the 22 teams used aerodynamic road helmets. Sitting between traditional lids and teardrop-shaped aero models, these have less venting than the former and a stubbier profile than the latter but with wind-tunnel data to prove their aero claims. This is princess-and-pea stuff when it comes to aero gains and there are no gear shortcuts here – unless you're happy to cover your vents with tape.

■ **KASK Protone**, £195, velobrand.co.uk



Bars

Aerobars are the ultimate statement of aerodynamic intent, giving you a lower, drag-reducing frontal profile. They're popular at midweek time-trials but aren't suitable for group riding, so think carefully before fitting an all-in-one aerobar (handlebars and aero extensions in one) – Orica GreenEdge use the PRO Missile Evo carbon aerobar (£600, madison.co.uk). Clip-on extensions may be a better bet, and a lot cheaper.

■ **PRO Missile Evo** ski-bend clip-on bars, £170, madison.co.uk



PRO BUYS TRAINING

It's not just race day where it counts – apply science to the build-up too



Altitude training mask

Altitude training is a key part of a pro rider's armoury. However, with purported benefits from 1,600m onwards and Britain's highest mountain, Ben Nevis, coming in at just 1,344m, you'd have to go abroad in search of thinner air. Alternatively, try the Training Mask – strap it over your mouth and switch a dial to increase or decrease air resistance. It purports to make the lungs work harder and so make you fitter.

■ **Training Mask 2.0**, £70, trainingmask.co.uk



Turbo trainer

Historically, pro riders finished a Grand Tour stage, dismounted their bikes and faced the media. Then Team Sky entered the fray and the world was treated to Ned Boulting stuffing a microphone in Sir Brad's face while he warmed down on a turbo trainer. Many teams mocked; now they follow. Warming down from your weekend ride on a turbo is a touch extreme; instead, use it for indoor training when the weather turns bad.

■ **CycleOps Classic Fluid 2**, £285, paligap.co



Bike computer

Head out on a training ride with Cannondale-Garmin and you'll be blinded by the numbers radiating from their Garmin Edge 1000s. It provides a wealth of on-the-fly data including speed, mapping, distance travelled... It's your technological training partner and retails for just under £400. However, when you're starting out, trip speed and distance will quench your thirst for feedback – Raleigh's wireless bike computers start around £34 (raleigh.co.uk).

■ **Cateye Stealth 50**, £180, zyro.co.uk

Unlike F1, pro kit is accessible to everyday cyclists – teardrop helmets and aero bikes with low-profile bar extensions can give you an advantage – if you can afford them

air forcing the body to adapt a number of mechanisms that the athlete can capitalise on back down at sea level. These include naturally increased production of EPO (erythropoietin, the hormone that produces oxygen-carrying red blood cells).

Regular altitude camps are the preserve of the elites but you too can benefit. ‘Training at altitude for just twice a week for a fortnight can increase capillarisation – essentially creating more capillaries for better oxygen

BENEFITS OF ALTITUDE TRAINING TWICE A WEEK FOR A FORTNIGHT WILL STAY WITH YOU FOREVER

transportation – and those changes stay with you forever,’ says Emily de Beaux of London’s Altitude Centre.

The Altitude Centre set their oxygen content at around 15% – which equates to around 2,700-3,000m. De Beaux says many riders come in twice a week, training for 30mins at a high intensity to keep enjoying the benefits of training high. ‘These might be sessions such as 1min on with 30secs recovery repeated six times. It’s the equivalent of an hour session at sea level and is for all levels of rider.’ As is achieving your perfect bike fit...

BIKE SET-UP

‘I remember Rod Ellingworth looking at my handlebar set-up at the national championships,’ says Movistar’s top time-triallist Alex Dowsett, ‘and saying I gave away 20-30secs to Wiggins – even though I’d won that year’s Giro d’Italia, beating Wiggins by 10secs. He said it was diabolical.’

Subsequently, Dowsett spent significant time in the Drag2Zero wind tunnel in Northamptonshire, honing his position. Wind-tunnel time can cost upwards of £1,000 for a two-hour session. However, having a professional bike fit is a more affordable option and, when starting off, will deliver far greater gains.

It costs around £100 and it’s money well spent. The practitioner will ensure you’re in the perfect position to not only maximise power and comfort, but also reduce chances of injury caused by the unnecessary strains and stresses of poor riding position. Expect changes to saddle height, fore-aft position; you might even have spacers removed or added on your stem to raise or lower your position; and a recommendation of a longer or shorter stem depending on reach.

Just remember that your new position will draw you to the bike even more, resulting in a leaner, fitter you. That’s why it’ll be worth revisiting the bike-fitter a year down the line in case your position needs tweaking. ‘Your





It may be hard to imagine how yoga can benefit top level pro cyclists but the Tinkoff-Saxo team is learning how breathing techniques can improve performance



BREATHY RIDER

The legs are your pistons but the lungs are your engine. Tinkoff-Saxo's body therapist Kristoffer Glavind Kjaer reveals how to up your revs

'When you light-breathe, you use one-third of the oxygen from the air you inhale,' says Kjaer. 'Learning to deep-breathe cranks that up to two-thirds. This is why I'm working with riders such as Alberto [Contador] and Peter [Sagan] on breathing techniques to maximise power from the diaphragm.'

'When we cycle, we think we have to breathe in for more energy. But it's actually the opposite – we have to breathe out. Techniques from yoga give people an awareness of their body and breathing which is why I've introduced them to the team. The two exercises below focus on exhaling to increase the efficiency of your breathing and get your body using that extra oxygen.'

NOVICE

■ Kneel down and sit on your lower legs (this takes a degree of flexibility but don't cheat by sitting cross-legged as we're trying to elicit perfect posture, which opens up your diaphragm). Keep your upper body straight, with chin slightly down and back. Now focus on inhaling slowly through your nose and feeling your diaphragm expand. Then slowly exhale through your mouth, until you like you've emptied your lungs. ■ Ideally, practise this daily for around 15mins. But three times a week will still elicit benefits. When you have mastered this exercise move on to the next.

MASTER

■ Simply close your mouth and breathe deeply through your nose. By closing your mouth, you have to inhale and exhale through your nose. This forces you to breathe from the diaphragm as you'll become breathless with shallow breaths. It's tiring but keep at it and the body will eventually respond by strengthening your diaphragm. This is a regular one for the riders who do it on and off the bike. ■ Progress from 5mins off the bike to a peak where you're nose breathing only during a ride for 30mins.

core strength might have improved, which will mean you might be able to accommodate a more aerodynamic position,' says Retül bike-fitter John Dennis, who has worked with many teams including Trek Factory Racing and MTN-Qhubeka. The scale of the changes the fitter suggests may seem alarming but, rest assured, you're in good company.

'All riders have Ferrari motors but some are still in a Volkswagen body,' says Specialized Body Geometry Fit expert Sean Madsen. 'Recently we looked at Edward Beltran [of Tinkoff-Saxo] and made some pretty significant changes. He'd been experiencing unilateral saddle-sores on one side caused by unequal tibia length. We put a bit of lift under his right cleat on his short side so he didn't have to reach so far.'

MARGINAL GAINS

Once you've honed your perfect fit, the extra ride time will mean greater focus on recovery. Tinkoff-Saxo's Michael Rogers told us this is what defined his time at Sky [2011-12]. 'This was down to managing training intensity and

TEAM SKY USE TIGHTS STUFFED WITH ICE TO KEEP COOL


the race schedule but other things, too.'

Such as compression wear. 'Compression wear has a multitude of benefits,' says Akbar de Medici, medical director at apparel company Compression Advisory. 'They include improving venous return to speed up recovery and reducing muscle damage.'

Every time you move, the calf squeezes the veins of the lower limb to send blood back to the heart. Compression wear gives it a helping hand, which is handy post-exercise when

you're looking to clear out toxins from all that exercise. Just make sure you achieve the correct fit or they won't work.

Compression tights or leggings should feature graduated pressure, which means applying greater pressure at the ankle than the calves to assist with the blood pumping process. 'Get this wrong and the blood will just pool,' says De Medici. 'And that's worse than wearing no socks at all.'

The further you delve into the professional peloton, the more you can learn. Teun van Erp started dishing out Slush Puppies to the Giant-Alpecin team before time-trials to lower body temperature, so they'll heat up more slowly during the event and so conserve energy, while David Martin at Orica GreenEdge has his riders training in front of race footage beforehand. Or you could go all high tech and follow Team Sky. 'Like many teams, when it's hot we stuff a pair of women's tights with ice and slip it down our backs,' says Luke Rowe. 'It does the trick!' Tights or no tights, there's a lot you can learn from the pros – and it doesn't need to cost the earth. 

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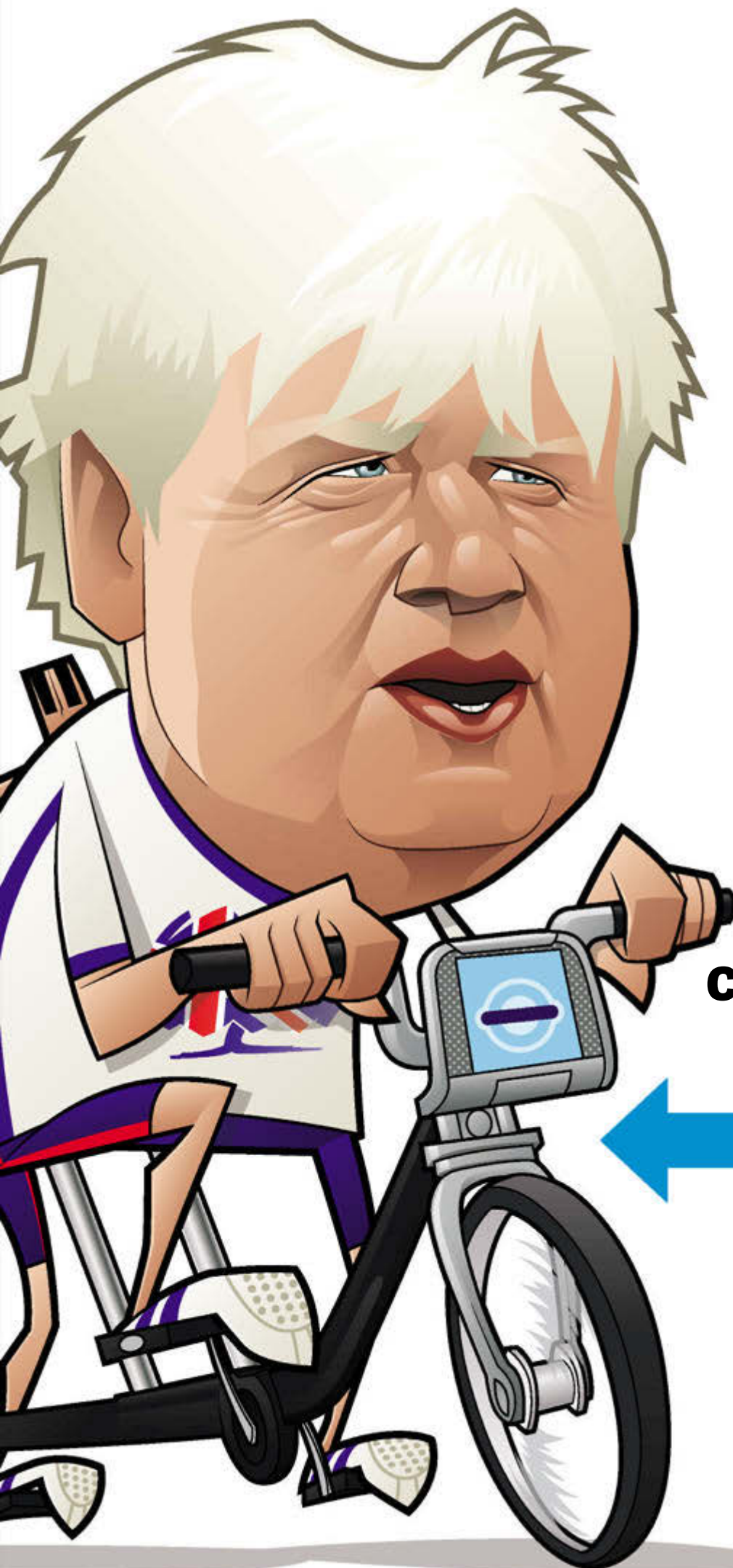
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THE RACE FOR NO.10

We all know bikes offer transport, environmental and health benefits, but with the election upon us, which party is best for the political cyclist?

WORDS: JACK THURSTON ILLUSTRATIONS: KEVIN FEBRUARY



Though the bicycle has occasionally found its way into the political fray – from the communal white bicycles of the Amsterdam anarchists to Tory cabinet minister Norman Tebbit telling the unemployed to get on their bikes – cycling has never really nailed its political colours to the mast. As an efficient and egalitarian mode of transport, cycling has a strong appeal to the left but the bicycle also embodies values of freedom and self-reliance beloved of the right.

It's tempting to think there's such a thing as a cycling vote, but we are small in number and spread out across the country. As political power brokers we're on a par with the lawn-bowls lobby or the beekeeping bloc. Though the ranks of weekend warriors are growing and our top racing cyclists are among the best in the world, Britain has more or less abandoned the bicycle as a serious mode of transport. We sit near the bottom of every international cycling league table.

The bicycle may still symbolise the carefree happiness of childhood but today's kids rarely ride to school. Outside a handful of cycling hotspots such as inner London, Cambridge and York, getting to work on a bike earns you the dubious moniker of 'keen cyclist', which is, as everyone knows, another way of saying 'not normal'. Yet, for the last ➡

CONSERVATIVE

Party pledge: 'Over the past five years, we have more than doubled spending on cycling schemes, ensured that new strategic roads are cycle-proofed and committed to delivering properly funded and targeted investment strategies for cycling and walking for England. We are helping to deliver safer junctions on road networks, traffic-free cycle links and cycle training in schools.'

What this really means: When he became Tory leader, David Cameron made headlines by riding a bike to work, though there were a few blushes when it was revealed his driver followed in a car. In 2013, Cameron announced a package of cycling funding for eight English cities but most say it's the Lib Dems who have fought for cycling within the coalition. With the Conservatives promising deep budget cuts if elected, it's hard to see where money for cycling will come from.

five years, our politicians have been singing the praises of the humble bicycle. As well they should. Cycling is a cheap, safe, non-polluting, pleasurable transport that's available to all. If more people rode bikes, the cash-strapped NHS could save a large chunk of the billions it currently spends treating illnesses such as heart disease, diabetes and depression that are caused by sedentary lifestyles, while noisy, polluted towns snarled in traffic could breathe again. Cars are great for longer journeys but it's crazy that nearly 40% of trips under two miles are made in a car.

LESS TALK, MORE ACTION

'What's really great is that there's interest and support across all three main parties,' says Sam Jones, campaigns co-ordinator at CTC, the national cycling charity. 'A lot has changed in the past five years. Having a coalition with the Liberal Democrats as a strong champion for cycling has really helped, and getting *The Times* on board, with its Cities Fit For Cycling campaign. All the sporting success, though

THE GREENS

Party pledge: 'We must create a transport system that is socially just and addresses health inequality by prioritising access to services by walking, cycling and public transport. This means reallocating road space, reducing road danger and cleaning up our air to make our towns, cities and villages into more liveable, socially inclusive places.'

What this really means: The Greens' pro-cycling position is long held and unequivocal. There is no doubt that Green candidates get cycling and Greens have been strong advocates for cycling in local government. The party's position is strong on funding. They would go beyond the £10 per head in cycling investment promised by the Lib Dems. But with only one seat in the last parliament, it's unlikely that the Greens will hold the balance of power in any future government. Even so, Green MPs guarantee that cycling will be represented in Westminster.



RIDING A BIKE ON FAST, BUSY ROADS, JOSTLING FOR SPACE WITH LORRIES AND CARS, IS NOT APPEALING

LIB DEMS

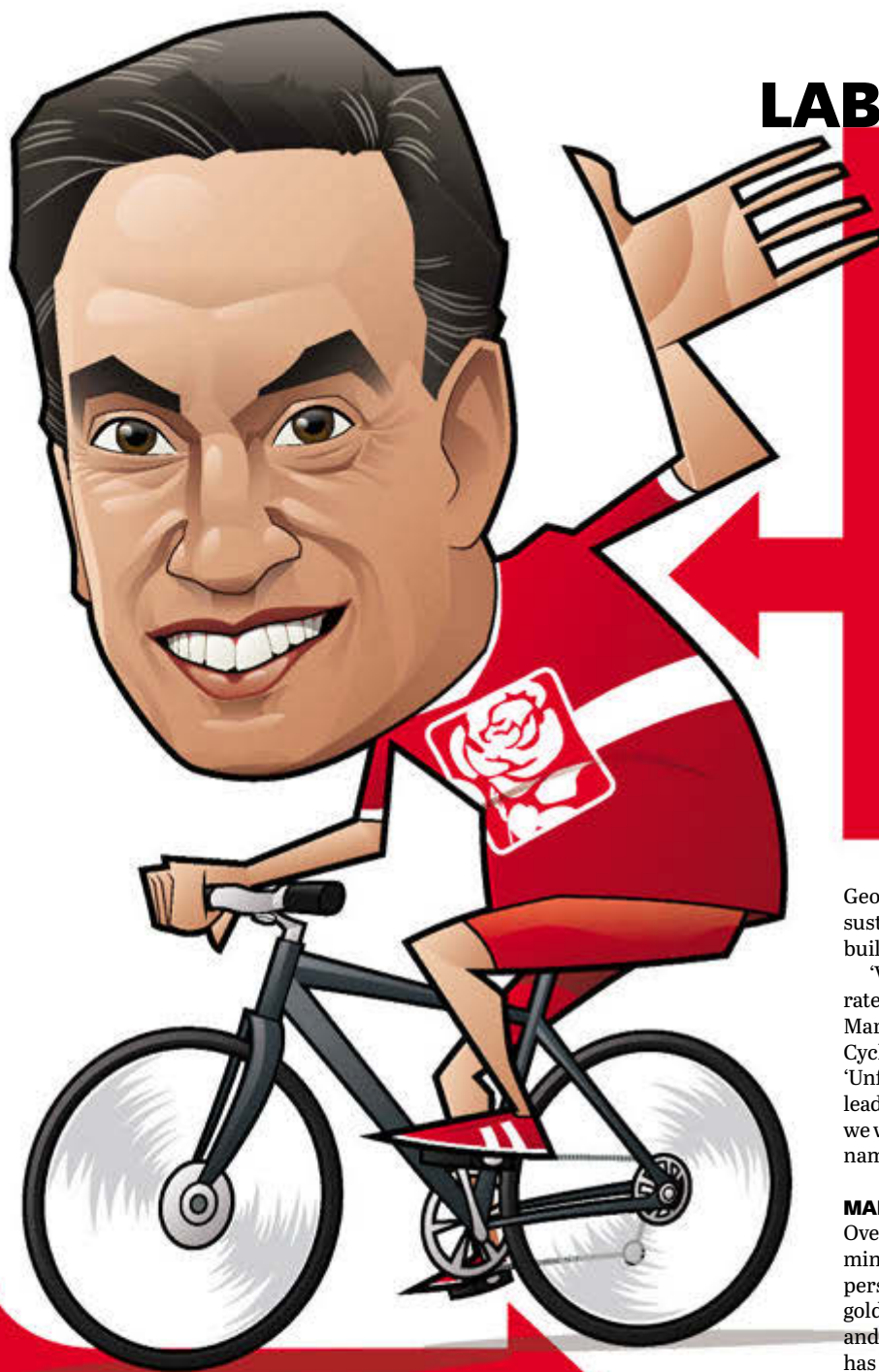
Party pledge: 'Getting Britain cycling is a core Liberal Democrat priority. We know that having more people cycling is a win-win situation: wellbeing increases, public health improves, roads are safer and less congested, and the environment benefits. We are the first party that committed to the Get Britain Cycling report's recommendations. We will give cycling the vital funding it needs of £10 per head to hit the target of 10% of journeys by bike by 2025, and 25% by 2050.'

What this really means: The Lib Dems have long been committed to increasing funding for cycling, embracing all the recommendations of the cross-party Get Britain Cycling report published in 2013. Lib Dem Norman Baker MP, who rides a bike himself, held the cycling portfolio earlier in the coalition government and is credited with fighting for cycling, though he didn't win all his battles.





LABOUR



Party pledge: 'Boosting cycling and walking is a big priority for Labour – it's good for our transport system, for public health and crucially for our environment. We will set out a clear and distinct, long-term active travel budget to give councils the certainty they need to invest effectively. For our strategic road network, we will commit to spending £250 million on cycling infrastructure, safety and integration. And we will match the government's commitment to spend £114 million on cycling across the country.'

What this really means: Labour's pledge of funding stability would be an improvement over stop-start funding of the past but falls short of Lib Dem and Green promises. Transport spokesman Michael Dugher said when appointed last December that he wanted to champion motorists, which didn't impress cycling groups, though recent statements are more in line with pro-cycling party policy.

George Ferguson, a founder member of sustainable-transport charity Sustrans, is building an improved network of bike tracks.

'We've let cycling levels drop to such a low rate, it isn't part of enough people's lives,' says Martin Key, campaigns manager at British Cycling, the national sporting federation. 'Unfortunately, we've not had the political leadership to shift the agenda. That's why we want to get big businesses and household names to deliver our message to government.'

MAKE SPACE FOR CYCLING

Overcoming decades of a motor-centric mind-set is, ultimately, a challenge of political persuasion. In Chris Boardman, the Olympic gold medallist, Tour de France stage winner and successful businessman, cycling finally has an advocate who's widely respected, level-headed, smart and persuasive. Working part-time at British Cycling, Boardman has applied his approach to winning bike races to the task of bringing mass cycling back to Britain.

The focus has shifted from issues like bike parking, cycle training and legal liability to addressing the one big reason why Britain stopped cycling: for most people, riding a bike on fast, busy roads, jostling for space with lorries and cars, is just not appealing. So the top priority among all cycling organisations is to design cycling back into the road network by providing dedicated, safe space for cycling. And to do this requires money.

'Cycling has been treated by both Conservatives and Labour as a charitable cause paid from hand-outs,' says Boardman. What's needed, he says, is to earmark 5% of the total transport budget for cycling. It's a big increase from the present 1% but it's still considerably less than what the Dutch spend on their enviable cycle infrastructure. What's more, the Dutch have been busy since the

not necessarily good for promoting cycling as transport, is still getting more people on bikes, even if they're just Sunday cyclists.'

The problem is that politicians have been talking up the cycling revolution for decades. But talk is cheap. The only major politician to put cycling at the heart of his agenda is Mayor of London Boris Johnson, chivvied along by the capital's hardworking cycle campaigners and a growing number of big employers who prefer their workforce to arrive at work in one piece. Johnson, who's planning a return to national politics at the general election, will leave London with a fleet of 10,000 hire bikes and two big segregated cycleways currently under construction.

In Edinburgh, a Labour-SNP coalition has presided over big increases in spending on cycling, while Bristol's independent mayor

**IF MORE
PEOPLE RODE
BIKES, THE
NHS COULD
SAVE BILLIONS
TREATING
AVOIDABLE
ILLNESSES**

MORE BIKES MEANS LESS CONGESTION, WHILE PEDESTRIAN- FRIENDLY POLICIES, SUCH AS 20MPH ZONES, BENEFIT EVERYONE

mid-1970s, building smooth, spacious bike tracks by main roads and keeping through traffic off residential streets.

It's not just cyclists who benefit. More people on bikes means less congestion on the roads, while pedestrian-friendly policies, such as 20mph zones, benefit everyone.

'All the parties are now committing to a network of high-quality infrastructure for cycling, which is great,' says Rosie Downes, campaigns manager at the London Cycling Campaign. 'But,' she stresses, 'if the money's not there then it's just not going to happen.'


MOTORISTS' CHAMPIONS

While the Conservatives and Labour back cycling in theory, neither is putting sufficient money on the table ahead of the election. The Conservatives entered the campaign by freezing fuel duty, announcing £11 billion for new roads and £100 million for driverless cars. In his first interview on becoming Labour's transport minister, Michael Dugher sought to define himself as the motorist's champion and Labour has tried to outdo the Conservatives on road building.

Even so, there are independent-minded backbench MPs in both main parties who speak up on cycling issues. Among them are Ian Austin and Ben Bradshaw for Labour

and Dr Sarah Wollaston and Steve Brine for the Tories. Of the major parties, only the Lib Dems have pledged to implement all the recommendations of the Get Britain Cycling report, including a big increase in funding. The Greens would spend more still, arguing that Dutch-level funding for cycling is 'a drop in the ocean' in the £20 billion annual transport budget.

In Copenhagen, six out of ten Danish MPs ride their bikes to the parliament. These are numbers that Adam Coffman, co-ordinator of the All Party Parliamentary Cycle Group, can only dream about. 'We need more high-profile cycling MPs,' he says. 'There's a long way to go and we're not moving fast enough. There are only a few constituencies where cycling figures electorally and most MPs around the country don't get much correspondence from constituents about cycling.'

The handful of MPs who regularly speak up for cycling have earned the cycling vote. But what would be the best overall result? With little to separate Labour and the Tories on cycling, it's the Liberal Democrats and Greens who have made the strongest appeals to cyclists. It may take another coalition of one kind or another to get cycling onto the next government's agenda. If the polls are to be believed, that's just what we're going to get. 



UKIP

Party pledge: 'We wish to encourage cycling and improve access and safety for cyclists. We would seek to introduce inter-urban cycle tracks by utilising closed railway lines and, where possible, increase extra cycling lanes. These would be high-quality paved surfaces and lit at night. We would encourage participation in a cycling-proficiency test to ensure an understanding of the rules of the road. Cycling is an enjoyable and efficient way of travelling, and we want to make it as safe and pleasant as possible.'

What this really means: Proclaiming itself to be 'the party of the motorist', UKIP made headlines this year when one of its candidates called for cyclists to be banned from the roads and forced to ride on the pavements, ceding priority to pedestrians. The party's official policy is more moderate, though it lacks specifics on funding and reallocation of road space.

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SWIFT RETURN

As his recent second place at Coppi e Bartali shows, Brit cyclist Ben Swift is ready to swap injuries for major wins. The Team Sky sprinter reveals his ambitions, his love of ice cream and why he's tougher than Alex Dowsett

WORDS **MARK BAILEY** PHOTOGRAPHY **GEORGE MARSHALL**



Team Sky jerseys are as ubiquitous as potholes on the roads and hills of bike-mad Britain. But if you live in Yorkshire, the shadowy cyclist dressed in black, white and blue who fizzes past you on a training ride could be a bona-fide pro with a Tour de France under his belt. 'Sometimes when I'm training in England, I get the double look,' chuckles Ben Swift, who joined Team Sky in 2010 and still rides near his childhood home of Rotherham, South Yorkshire on trips back to the UK. 'It's funny because often I see our team-mates – our fans in Team Sky kit – look at me and open their mouth ready to say something but all you get is an "Er... ah..." and then you're gone.'

The overlap of cycling's professional and amateur domains, with weekend warriors free to tackle the same climbs and Strava segments as the pros, is one of the most appealing aspects of the nation's fastest-growing sport. Although Swift, 27, spends most of his time training in Majorca, Tenerife, the Isle of Man and the south of France, he enjoys seeing the two worlds blend on roads back home where, surprisingly, he still happily rides with local amateurs.

'In the UK, I train with the same group of cyclists I've been riding with since I was 12,' he reveals. 'Most don't race; they're hobby cyclists. I can come back from a World Tour race, but to them I'm just normal. They're the same lads I used to wag school with to go out riding.'

The Yorkshireman is one of the more approachable riders in the professional peloton.



He enjoys a *Game Of Thrones* box-set binge and a blast of pop on his Spotify account. He is not averse to cake with his cappuccino or a dollop of ice cream at home. 'My problem is that once I have a Ben & Jerry's, I finish a Ben & Jerry's. That was my New Year's resolution: to not finish the ice cream in one.'

He also delights in winding up his cycling pals. In February's *BikesEtc*, Movistar's Alex Dowsett remarked, 'Ben Swift thought he was the "king of the turbo" because when he hurt his collarbone, he used to do a two-hour session in the morning and at night. When he heard about my mammoth five-hour turbo session, he was quite hacked off about it.'

Swift shakes his head. 'First, I think I'd beat Dowsett on the turbo,' he says, grinning. 'I've got much more than he has. He can challenge me to a duel. You can tell him that. It was actually my shoulder injuries [in 2012 and 2013] that started those big turbo sessions for me. I'm not into the pain of it. That's why Dowsett likes it. He's a bit weird.'

MAN ON A MISSION

Despite Swift's jesting, there's no such frivolity on a bike. In his 2013 book *Project Rainbow: How British Cycling Reached The Top Of The World*, Team Sky's head of performance operations Rod Ellingworth, who'd previously coached Swift and Mark Cavendish at the U23 British Academy Programme, likens Swift's ruthless winning instinct to that of Cavendish. 'You put them against the clock and they weren't that good, but they knew how to win races,' he wrote. 'He's not a big bunch sprinter, but if he's in a group of 20 or 30, you'd put big money on Swift winning.'

The 27-year-old's talent has been obvious for a long time but he has been plagued by injury.

Serious crashes resulted in two complicated shoulder operations, which affected his training and

diluted his confidence in sprints. After an injury-free campaign in 2014, he is desperate to chalk up some major race wins this season.

Swift has enjoyed a number of memorable moments in his career, including a King of the Mountains jersey at the 2007 Tour of Britain, victory in the 2010 Tour of Picardie, stage wins at the Tour of California and the Tour Down Under in 2011, a scratch race world title on the track in 2012 and an eye-catching third place in last year's Milan-San Remo. However, he has suffered a disheartening run of second-place finishes since then, notably at the 2014 British National Road Championships and the recent Settimana Internazionale Coppi e Bartali, where he won a stage but lost the overall title by two seconds to Louis Meintjes. It's an issue he's keen to remedy.

'I grew up winning races, so it's frustrating that I've had a lot of second places,' he says. 'I've won a few races but not enough. If I could change half of my second places into wins, I'd have a different career. Hopefully, I can step that up a bit now.'

Having missed out on the chance to race in his native Yorkshire at the 2014 Tour de France, Swift is eager to win a stage at the inaugural Tour de Yorkshire (1st-3rd May). 'It was frustrating not to race at the Tour, so I'd love to win in Yorkshire. I grew up training around there, so it would be very special.'

Swift is also an ambassador for the London Cycle Sportive, which takes place on 10th May. 'I think there will be a real buzz that month with the Tour de Yorkshire and the London Cycle Sportive. It's amazing to see how cycling has grown here.'

The big question for Swift is how he hopes to upgrade from irritating second places to bold race wins this year. 'Confidence is the

big difference,' he says. 'I had a well-balanced season last year because I was performing well in January and October. I started 80 days of racing and finished 77 of them. I got 12,000km of racing in my legs. I had no issues at all, whereas in the two previous winters, I had to have operations. Over winter, I only needed a week's break and I was raring to go. I started my training at a much higher level.'

The Team Sky rider also signed a new two-year contract in autumn. 'Belief of the team is important,' he says. 'When you have a few years of injuries, crashes and near misses, it's

good to know the team is motivated and happy to see you back performing again. That drives you on.'

When Swift heads home in May, he will have just finished the spring-classics season. He relishes the gritty one-day races of Europe, whose lumpy courses and fast finishes suit his style. 'Milan-San Remo is the standout one but I have also done the Tour of Flanders [in 2011], which was six and a half

hours but felt like minutes. You're running on adrenaline for most of it. In these races, you have one chance and if you have a crash or puncture at the wrong time, that's work down the drain. Everything is on the line. It's full-on racing. That is the beauty of it.'

FAKE TAN AND YELLOW BIKES

The Rotherham-born cyclist grew up riding BMXs and mountain bikes before switching to road and track. He was racing before he'd even started school. 'I did my first race when I was three and a half, so I've been doing it for quite a few years,' he says. 'That was at a local national park. My dad rode with me. I was last. There were no age categories, sadly.'

He dabbled in other sports but cycling was his real passion. 'When I played football, I just

"I'D BEAT
DOWSETT
ON THE
TURBO.
HE CAN
CHALLENGE
ME TO
A DUEL"



RACE-DAY FOOD DIARY

PRE-RACE BREAKFAST

'I normally have porridge with dried fruit, as well as an omelette and bread. When I'm travelling to a race, I might have a coffee and a CNP flapjack.'

FOOD ON THE GO

'I take six blocks of food in my pockets. That might be rice cakes, jam paninis and apple cake or a brownie. I'll also take a couple of CNP Hydro Gel Max [energy gel with electrolytes and caffeine].'

THE FEED ZONE

'When I pick up the feed bag, I take three solid items of food, which are the same items as I had at the start. I rarely take a can of Coke because it gives me too much of a high and too much of a low. I'll also top up my gels. I'll have two or three Hydro Gel Max, two normal gels and two caffeine gels for the final hour. At 40km from the finish, I'll have my last solid food and only take gels from there.'

POST-RACE RECOVERY

'After the race, we'll have a protein shake while we warm down on the rollers. Then I'll get on the bus, have a shower and tuck into tuna or chicken with rice.'

DINNER

'My ideal post-race dinner would be salad with cheese, then pasta and mushroom sauce and slow-cooked meat. We need to sack our nutritionist so we can have puddings too!'

stood there picking the mud off the bottom of my boots. I had no interest. As a kid, I enjoyed the speed of the bike. My mum would say, "Make sure you come back every hour so I know where you are!" But I'd go out at 7am and not get back until the sun had set.'

He watched sprinters such as Óscar Freire of Spain and Robbie McEwen of Australia and would race home from school to see the Tour de France on TV. Swift's first road bike was garishly memorable: 'It was fluorescent yellow and blue. The bike was tiny. It had gears on the down tube. It was a 12-speed, maybe even an eight-speed. It had brake cables coming out of the top of the levers, and little drop handlebars. I loved it.'

His passion for cycling occasionally got him in trouble. He would sometimes skip the end of school to join the local club run and he can remember riding behind the school bus that he should have been on. He was also guilty of style faux pas: 'I would have fake tan on my legs but not my arms. That was in the junior days. Dowsett still does that now.'

As a youngster, Swift raced for Ashfield RC, Mossley CRT and Scunthorpe Poly CC. Through the junior circuit he became friends with Britain's most talented young riders. 'There was a strong group and the thing is, most of them are now with me at Team Sky. I grew up with Ian Stannard, Geraint Thomas, Pete Kennaugh and Luke Rowe. Cav was around and Adam Blythe lived 30 minutes away. The amount of time we've spent racing together is pretty amazing.'

Swift's dreams were almost dashed when he failed a trial for the British Cycling Talent Team, which had been created to help gifted young riders. 'Everybody said, "You'll make it." But I never

passed the test. I didn't even make the required power for the category below the girls' age-group benchmark. I got a letter saying, "Sorry, you haven't made it."

When Swift recently showed the letter to Rod Ellingworth, the Team Sky performance boss laughed. 'I was never the strongest at races but I was always performing at the front, so it didn't make sense. Rod says it sparked a different way of thinking. They changed the criteria. But, I got into the Olympic Development Programme so I still went through the British Cycling system.'

PRO DREAMS

Swift was a natural champion as a youngster. He won a junior national track title in the points race in 2004 and in the scratch race in 2005. He also won the Rutland CC Midsummer Road Race in the same year. This sustained success earned him a place at British Cycling's Under-23 ➡

The Rotherham-born rider is using the frustration of missing the 2014 Tour de France, with its Yorkshire stages, to spur him on to success at this year's inaugural Tour de Yorkshire



FAST FASHION

Team Sky is known for its stylishly branded kit and fans show their support by wearing it on their own rides. In our photos, Ben is wearing the new season's designs, replicas of which can be bought from rapha.cc



Training Bibshorts, £160;
Training Brevet Gilet, £80;
Training Brevet Jersey, £130

After a flurry of 'irritating' second-placed finishes, Swift believes his winter training will give added confidence

'THE TOUR DE FRANCE WAS CARNAGE. I'VE NEVER SEEN SO MANY CRASHES'

Academy in 2005. The system enabled an elite group of talented riders to train in Manchester and Tuscany, learning about bike cleaning, sprint tactics and descending.

'That move to Italy was proper boys-on-tour stuff,' he says. 'It was hard work because our lives became a training camp. You've got to eat healthily; you can't party all the time.'

Rod Ellingworth believes these were crucial years in Swift's development: 'He had the skills, became a bigger, stronger lad and Italian racing suited him because you'd often have a smallish group coming into the finish after a section over the climbs. So he was winning races regularly in Italy, and in 2008 he was one of the best three under-23s there.'

In 2007, Swift earned a trainee contract with Barloworld and went on to win the King of the Mountains jersey at the Tour of Britain. A pro contract with the Russian team Katusha followed in 2009, before he switched to the newly formed Team Sky in 2010. He completed his first Tour de France in 2011.

'The first stage of the Tour was carnage,' he recalls. 'I've never seen that many crashes in a single road stage. We were always stopping

and trying to stay upright. But riding the Tour was massive. I got in a breakaway on the final day on the Champs-Élysées. My girlfriend, family and friends were all there. It was very special. I had already done the Giro and the Vuelta, but at the Tour, I was so nervous I found myself not going for the normal gaps. I remember thinking to myself, "You race against these guys week in, week out; there is no difference; just enjoy it."

It is a philosophy that has quietly guided Swift through the peaks and troughs of the subsequent years. But he knows that with a few more high-profile victories he will be able to enjoy life even more. The Yorkshire rider clearly hopes that 2015 will be a year in which he reminds the cycling world what he can do. 'It's time to really kick on,' he declares. 'Over the past few years, we have developed into a renowned cycling nation. I am really proud to be around in this era and I want to play my part in it.'

Ben Swift is an ambassador for the London Cycle Sportive, 10th May. The ride ends with a lap of Herne Hill Velodrome. Sign up at humanrace.co.uk/cycling

BEN SWIFT'S TOP FIVE TRAINING TIPS**ADD HEART TO YOUR TURBO SESSIONS**

'I don't use a heart-rate monitor on the road, but on a turbo they're useful. Unlike riding outdoors, you have no sensation of speed or movement. A monitor makes sure you're working at the right intensity.'

**TACKLE ALPS WITH HILL REPETITIONS**

'You don't need to live near big climbs to train for Europe's mountains. Four or five hill reps on a shorter UK climb is a good way to practise. Time yourself and use that as a benchmark, so you can see improvement.'

**ALWAYS RIDE FOR A REASON**

'As a professional, every time I get on my bike it's for a specific training session. Think about what your goal is that day. Is it to improve speed, fitness or climbing? Working like that helps you to stay motivated; you know exactly what your aim is.'

**FIND YOUR LOCAL VELODROME**

'Learning to ride on the track can be a massive help to a road cyclist. I've reintroduced the track into my own training. It improves your sprinting; it also develops your ability to ride smoothly at a high cadence, which can help on climbs.'

**FIGHT PAIN WITH FOCUS**

'On a climb, I'm rarely the one dishing out the pain – I'm the one receiving it. The way I handle it is to focus on the wheel in front and concentrate on my technique. When you're thinking how much it hurts, you're going to get dropped.'

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Welcome to *BikesEtc*'s reviews section. Whether you're after a bike, kit or clothing, we've put the latest gear through its paces to help you find what's right for you

PHOTOGRAPHY JENNI LESKINEN, DANNY BIRD, HENRY CARTER

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THE AWARDS



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BikesEtc Gold Award

This prestigious award goes to bikes, accessories, components or items of apparel with exceptional levels of performance, design and build quality that make them must-haves. Don't expect to see it every issue – we only hand it out when it's truly deserved.



THE CARBON BALANCE

For many, £1,200 marks either the maximum or minimum you should spend on a bike. These five carbon bikes – all around that price – promise great frames, great components and a great ride, but can you really have it all?

WORDS ANDY WATERMAN, JORDAN GIBBONS

D Depending on your perspective, £1,200 is either very little to spend on a bike or an absolute fortune – it's the kind of mid-point where people draw a line in the sand, and that goes not just for consumers, but for manufacturers too.

Bikes at this price begin to get either really good frames or really good components, but only rarely do they get both – production costs mean there's

always going to be a compromise somewhere.

The bikes we've chosen here all make use of carbon fibre frames and forks and are designed for long days in the saddle – some will make decent race bikes too, but generally speaking, we're looking at bikes best suited for use in sportives, where sustained pace and comfort trump acceleration and fast, aggressive handling.

Some are 11-speed, some are 10-speed, and one

even has just nine gears in the rear cluster, reflecting the priorities of the manufacturer in supplying the bike with the best non-consumables – the frame, fork and finishing kit – and leaving the parts that wear out to be replaced and upgraded by the purchaser over time.

But what's the best approach? After much debate and many miles on the road, we had to come up with an answer – read on to find our conclusion.

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HOW WE TEST

When it comes to testing bikes, we don't take anything the manufacturers tell us as gospel: the first thing we do when a new bike arrives is to take its measurements and compare our findings with the geometry stated. We also compare the spec with what is advertised – has anything changed?

With the seat and bars moved into roughly the correct positions, we head out to ride a few laps of our local park loop to fine-tune the set-up before the first big test ride. Bigger rides consist of short, sharp climbs, longer seated efforts, descents and a variety of road surfaces.

Every aspect of the bikes' handling and performance is assessed and scored according to our detailed criteria, and then the bikes are passed around the team for an all-important second opinion. Finally those opinions, scores and measurements are collated into the comprehensive reviews you're about to read.

THE OVERALL RATING FOR EACH BIKE IS BASED ON THESE ELEMENTS...

FRAME

Our in-house testing questionnaire rates frames out of 30, based on geometry, on-road feel, stiffness, compliance, finish and intended use.

COMPONENTS

We rate components out of 20, based on groupset and finishing kit – great bars and stems will be marked down if they're the wrong size for the frame.

WHEELS

We rate the wheel and tyres package out of 20, weighting it towards the wheels: tyres come and go but wheels are a more expensive element to replace.

THE RIDE

Rated out of 30, we take into account ride quality and also value – does the bike do what we expect of a bike at this price? The best exceed expectations.



Cube Agree GTC Pro £1,199

Ready to race but keeping to an ethos of good value

About the bike

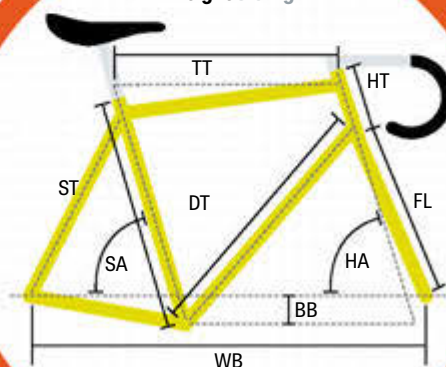
The German brand Cube was started in 1993 by Marcus Pürner (the son of a furniture maker), who sold bikes direct to consumers with a focus on value for money. They're now available through a selection of shops but Cube still remains fixed on offering reasonable prices. The Agree sits just below Cube's top-of-the-line Litening and benefits from trickle-down technology in the frame. All the info on the bike describes it as 'racy', so we were keen to give it a try.



GEOMETRY

	Claimed	Measured			
			Head tube (HT)	145mm	145mm
Top tube (TT)	545mm	545mm	Head angle (HA)	72.0°	73.0°
Seat tube (ST)	520mm	520mm	Seat angle (SA)	73.5°	73.8°
Down tube (DT)		610mm	Wheelbase (WB)	987mm	985mm
Fork length (FL)		375mm	BB drop (BB)	65mm	64mm

Size tested 56
Weight 8.51kg





SPEC

FRAME
GTC Monocoque Twin Mold Technology, CSL Race carbon tapered fork

GROUPSET
Shimano 105, 11-speed

BRAKES
Shimano 105

CHAINSET
Shimano 105, 50/34

CASSETTE
Shimano 105, 11-32

BARS
Cube Wing Race Compact

STEM
Cube Performance

SEATPOST
Cube Performance

WHEELS
Fulcrum Racing 77

TYRES
Continental Grand Sport Race SL, 25c

SADDLE
Cube RP 1.0

CONTACT
cube.eu

Frame

A carbon monocoque, 'Twin Mold'-process frame allows Cube to control wall thicknesses and resin distribution, meaning the frame is both stiff and light. It's described as 'ready to race', and looking at the geometry chart, we agree. We rode the 56cm model (the range is 50-64cm), which has a relatively short effective top tube at 54.5cm, so if you're thinking about purchasing, you might need

to go a size up. At the smaller end, there are 3cm jumps between frame sizes (50cm, 53cm, 56cm), so it's advisable to try it out before taking the plunge. The head tube is fairly short for a sportive bike at 145mm, but the head angle is standard at 73 degrees (measured). The chainstays, too, are short at 406mm, which, with the short top tube and high bottom bracket (measured as a 64mm drop) gives it a really short (985mm) wheelbase. Take all

this into account and we're looking at a bike that should be dynamic and quick to change direction. The Agree's frame design echoes those racing aspirations with a big fork that tapers to 1.5in and only just fits the 25mm tyres, and an oversized PF86 bottom bracket area. The gear cables are externally routed, which is a plus as internal routing can be a faff, and a potential mechanical nightmare, with no real benefit. [🔗](#)



Should gear repairs be needed, external cabling is preferable; internal routing can cause more problems than it solves

Components

The Agree GTC Pro comes with a complete 11-speed Shimano 105 groupset which, for the price, is excellent. The new 105 borrows a lot from the higher-tier versions, with the shifting in particular taking a big step forward. The front derailleur on the 105 is leaps and bounds above the Tiagra and Sora units, thanks to the elongated arm, and shifting in general is much crisper due to the new cable coating. The bike comes with a 50/34 chainset and an 11-32 cassette, which offers a good spread of gears, but on a bike with racing intent we'd liked to have seen some different ratios – a 52/36 chainset with a more tightly spaced 11-28 cassette perhaps. The new-style Shimano brakes are some of the best available and the 105 models give plenty of power and modulation, so you can get away with braking late into corners. The rest of the finishing kit is all Cube's own but there are a couple of things to note. The handlebar shape and badly positioned levers needlessly elongated the reach. The stock seatpost is in-line, which is fine in principle, but might not suit taller riders – you may have to switch it for a layback seatpost to get the saddle in the right position.


Wheels

Squeezing in the 105 groupset at this price usually means you have to settle for cheap wheels and tyres but that's not the case here. It's fitted with Fulcrum Racing 77 wheels (which are re-badged Fulcrum Racing 7), and Continental Grand Sport Race tyres. Fulcrum Racing 7 are considered sturdy training wheels. They're not the lightest in the world but they're stiff and built well enough to ride all year round. The Grand Sport Race is a great tyre on a bike of this price; its 120tpi casing is supple and the rubber compound is grippy. The 25mm versions that are fitted weigh 250g, which is pretty lightweight too.

The ride

Going off the geometry chart, this bike is pretty racy and getting out on it, there were no surprises in that regard. The short wheelbase meant the bike required no real effort to change direction and with that high bottom bracket, pedalling is confident through tight corners. Despite having a short top tube, the low front end gets your weight over the



front wheel, making it comfortable to flick the bike around. The frame is stiff under power and with that sharp geometry it'll draw the hooligan out in you; you'll want to chuck the bike around and get stuck in. Going fast up to a corner, scrubbing off the speed with those fantastic Shimano brakes, before getting out of the saddle and going for it again... all this was fine for the first hour. Then, suddenly, the bike became tiresome. The frame transmitted a lot of vibrations through the bars and hands started to ache. Filtering through some traffic, the whole bike tucked under on greasy tarmac, and that tight wheelbase didn't seem quite such fun. The whole package seems a little confused – the gear ratios suggest novice but the handling characteristics and unforgiving geometry suggest race bike. But for the fantastic value that the bike offers, it might be worth swapping bits out to give yourself a better ride. 



For a bike under £1,200, an 11-speed Shimano 105 groupset is a welcome inclusion, although gear ratios are more for novice than seasoned riders



RATING

FRAME

Short top tube and head tube say: quick!

COMPONENTS

Shimano 105 with crisp shifting is great value

WHEELS

Re-badged Fulcrum 7s are sturdy and stiff

THE RIDE

Dares the owner, but vibration takes it toll

OVERALL

8.1
10

With its stiff frame and sharp geometry, it'll draw the hooligan out in you

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Trek Émonda S4 £1,200

Entry-level model of the world's lightest road bike

About the bike

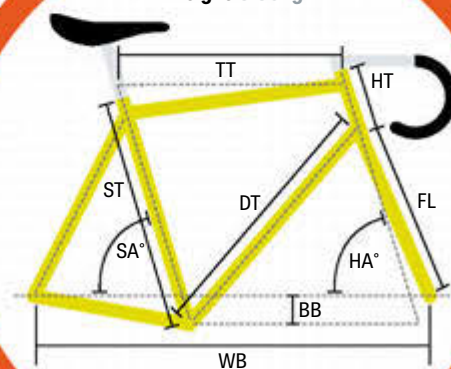
Trek launched the Émonda range to a huge fanfare last year with the range-topping SLR10 hyperbike – the lightest production bike in the world. The Émonda fills a neat gap in the Trek line-up: it has the all-rounder Madone, a cobbles specialist in the Domane and now the climber's bike, the Émonda. Trek Factory Racing has been giving the full-blown SLR version a good workout, so we were interested to see how the entry-level frame stacked up.



GEOMETRY

	Claimed	Measured			
			Head tube (HT)	155mm	155mm
Top tube (TT)	543mm	545mm	Head angle (HA)	73.0°	72.9°
Seat tube (ST)	506mm	500mm	Seat angle (SA)	73.7°	73.0°
Down tube (DT)		595mm	Wheelbase (WB)	981mm	987mm
Fork length (FL)		373mm	BB drop (BB)	70mm	72mm

Size tested 54
Weight 8.80kg





SPEC

FRAME Ultralight 300 Series OCLV carbon, BB86.5, E2 carbon fork

GROUPSET Shimano Tiagra 10-speed

CHAINSET Shimano Tiagra, 50/34

BRAKES Shimano Tiagra

CASSETTE Shimano Tiagra, 12-30

BARS Bontrager Race, VCR

STEM Bontrager Race Lite

SEATPOST Bontrager Alloy, 2-bolt

SADDLE Bontrager Paradigm 1

WHEELS Bontrager Tubeless Ready

TYRES Bontrager R1 Hardcase Lite, 23c

CONTACT trekbikes.com

Frame

The Émonda S4 is made from Trek's own blend of OCLV carbon, which is the same technology as the top-of-the-range models, but not quite as light or as stiff. That said, it packs in some nice features picked up from its more expensive siblings. First off, the frame is DuoTrap ready – it has a cutout in the chainstay for a computer speed/cadence sensor (DuoTrap sensors are ANT+ so they're compatible

with Garmins), which is a well thought-out, quality touch. There's also an integral chain catcher attached to the bottom bracket shell because, let's face it, accidents can happen. It's oversized in the right places too, with a tapered head tube up front and a BB86.5 bottom bracket down below. Trek makes its frame in a range of geometries: H1 to H3. The Émonda S4 is the H2 geometry, which is meant to be a good mix of performance and comfort. At

15.5cm, the head tube on our 54cm test model wasn't especially tall, but not small either, while the top tube was right on for us, at a smidgen over 54cm. The geometry is classic road bike: a 73-degree head tube angle matched to a fork with 45mm of rake, giving 56mm of trail. This, paired with a 70mm bottom bracket drop and 410mm chainstays (appropriate to the frame size), gives the bike almost perfect handling: the



A cutout in the seatstay is ready to take the Garmin-compatible DuoTrap cadence/speed sensor

wheelbase is short enough to make the bike fast and fun but without ever getting out of hand. It's exactly the sort of bike we'd give to a friend who's new to the sport and say, 'This is what a bike should handle like.'

Components

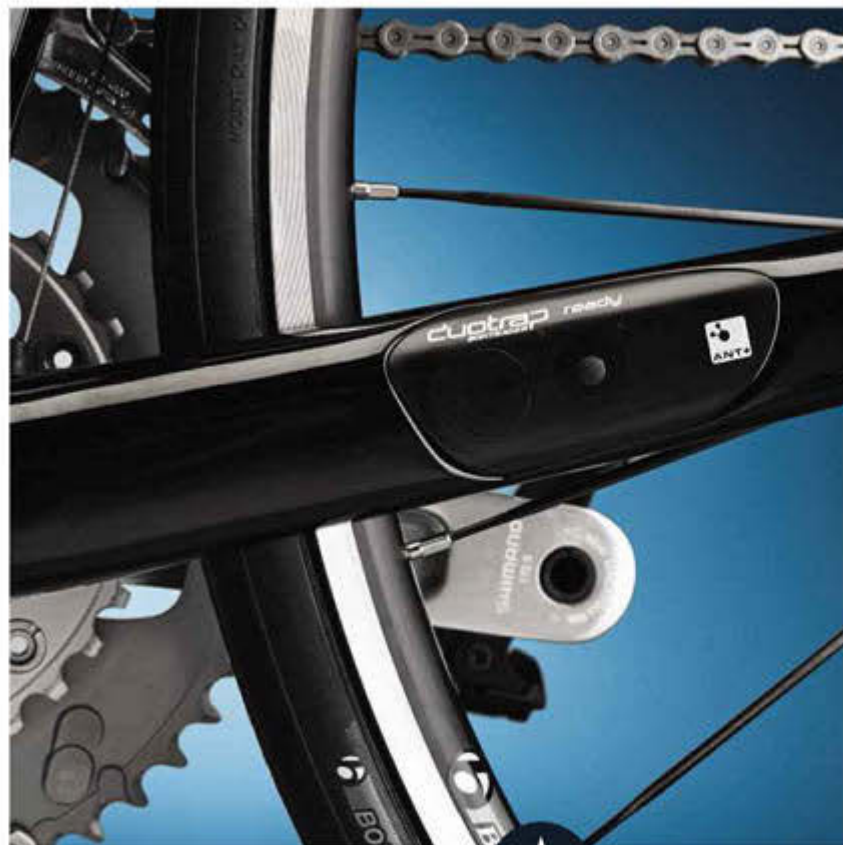
The Émonda S4 comes with a full Tiagra groupset and we have some reservations about it: the STI levers aren't a nice shape and the brakes leave quite a bit to be desired, their odd shape making it difficult to brake hard unless you're in the drops. It's saved a little bit by the handlebars, which are among the nicest shaped bars we've used in a long time. The compact and rounded shape of the drops means the inevitable transition there to achieve a good level of braking power isn't such a big deal. The remainder of the finishing kit is all from Trek's in-house brand Bontrager and it's some of the best kit we've seen bundled on an entry-level bike. It's all well put together and would look at home on bikes much higher up the range, especially the seatpost, with its clever two-bolt design, which makes fine-tuning easy. Our only complaint – and we're splitting hairs here – is that the saddle is perhaps a little over-padded and spongy.

Wheels

The wheels and tyres are both Bontrager items again and once more they're hard to fault. The hubs are pretty standard but the rims are tubeless-ready, so you can swap over to tubeless tyres if you want to. There are plenty of spokes keeping them together too, so they should last a good while. Despite that, they're not especially heavy, so they get up to speed quite quickly. We'd also like to draw particular attention to the quick-release skewers: a component that's often overlooked, but the ones on the S4 are great quality and just make the whole bike feel that bit more special. The Bontrager R1 tyres roll well but we'd have liked to see 25mm fitted instead of the 23mm tyres the bike came with, since the frame will take them easily.

The ride

Climbers' bikes should be light and stiff so that they're quick to accelerate and the Émonda didn't disappoint. A great lightweight climber's bike gives you this strange sensation



when you head uphill, almost as if there's someone giving you a little push and the Émonda gave us that feeling instantly. Riding the Émonda is so effortless, it makes tired legs feel instantly rejuvenated. The bike accelerates swiftly with every input and only the tiniest bit of lag. Despite its obvious stiffness, the bike remains comfortable and after a long ride we weren't over-fatigued, as can often be the case with this sort of bike. It also encourages you to seek out those climbs for the reward of the ensuing descent: as soon as the road pitches back down, that classic road geometry really comes into its own. The bike changes direction with ease but remains composed throughout. It's fun without going wild; it's predictable without being dull, and it's that reliability which soon has you pushing your limits, all the while feeling completely confident and in control.

RATING

FRAME

Light and stiff with classic road bike geometry. Great

COMPONENTS

Poor Tiagra brakes, good Bontrager finishing kit

WHEELS

Not too heavy, well built and tubeless-ready too

THE RIDE

Climbs effortlessly, descends predictably

OVERALL

8.9
10



The oversized tapered head tube (above) and bottom bracket (right), add stiffness to the frame where it counts



Riding the Émonda is so effortless, tired legs are instantly rejuvenated

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Specialized Roubaix SL4 Double £1,300

A multi-surface stalwart – just enjoy the ride

About the bike

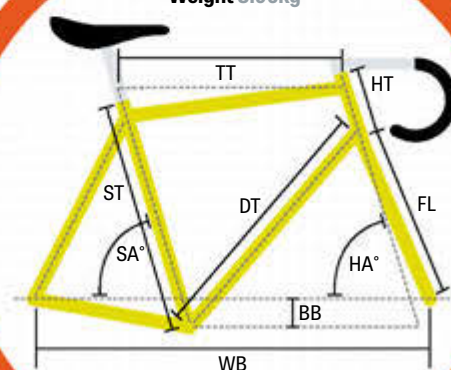
Specialized released the first-generation Roubaix in 2008 and it's been winning races ever since. The name comes from the infamous one-day Classic Paris-Roubaix race that cuts across the landscape of northern France, covering 253km with approximately 53km of that taking place on rough cobbled farm tracks. But how effective is their frame design or are features such as the shock-absorbing Zertz inserts just a gimmick?



GEOMETRY

	Claimed	Measured			
			Head tube (HT)	165mm	165mm
Top tube (TT)	548mm	544mm	Head angle (HA)	72°	71.6°
Seat tube (ST)	495mm	498mm	Seat angle (SA)	73.5°	73.3°
Down tube (DT)		596mm	Wheelbase (WB)	1000mm	1003mm
Fork length (FL)		376mm	BB drop (BB)	71.5mm	72mm

Size tested 54
Weight 8.96kg





SPEC

FRAME
Specialized SL4 FACT 8r carbon, FACT carbon fork

GROUPSET
Shimano Sora 9-speed

BRAKES
Axis 1.0

CHAINSET
Shimano Sora, 50/34

CASSETTE
Shimano Sora, 11-32

BARS
Specialized Comp Shallow

STEM
Specialized Comp Multi

SEATPOST
Specialized CG-R, FACT carbon

WHEELS
Axis 1.0

TYRES
Specialized Espoir Elite, 25c

SADDLE
Specialized BG Toupé Sport

CONTACT
specialized.com

Frame

The Roubaix has been designed with one thing in mind: comfort. The frame is constructed from Specialized's own blend of carbon, FACT 8r, but the frame's uniqueness comes from the Zertz inserts in the seatstays and fork. Made from a viscoelastic polymer, these act as dampers to absorb vibrations from the road before they reach your body, the idea being to increase comfort and reduce fatigue so

you can ride faster and longer. This is carried through in the frame geometry. The top tube is on the shorter side and the head tube is tall at 16.5cm (2.5cm taller than the equivalent Tarmac, Specialized's racing platform). The head angle is quite slack at 71.6 degrees, so steering remains relaxed. The bottom bracket is quite low too, which, when combined with the 415mm chainstays, gives the bike a longer-than-usual wheelbase, making for

a very stable ride – perfect for the rough roads the bike was designed for. Despite the focus on comfort, cornering remains fun and precise thanks to the full-carbon tapered fork and the oversized, hourglass-shaped head tube. There is clearance for 28mm tyres too, if you want to make the ride really plush. The spread of sizes on the frame is good, and Specialized makes a point of altering the chainstay length and bottom bracket



Shock-absorbing Zertz polymer inserts in the seatstays are one of the Roubaix's unique defining features

drop to ensure a consistent ride feel across the size range. However, the fork rake (how much the front hub is offset from the steering axis) stays the same throughout the range at 49mm, while the head tube angle varies with frame size, which affects the trail (how far the tyre contact patch is behind the steering axis). This in turn affects the handling of the bike: the smallest frames have a whopping 59mm trail, giving a very stable ride, while the 61cm frame has just 53mm, which is very short and nippy – not really the sort of thing you want on a cobbles bike.

Components

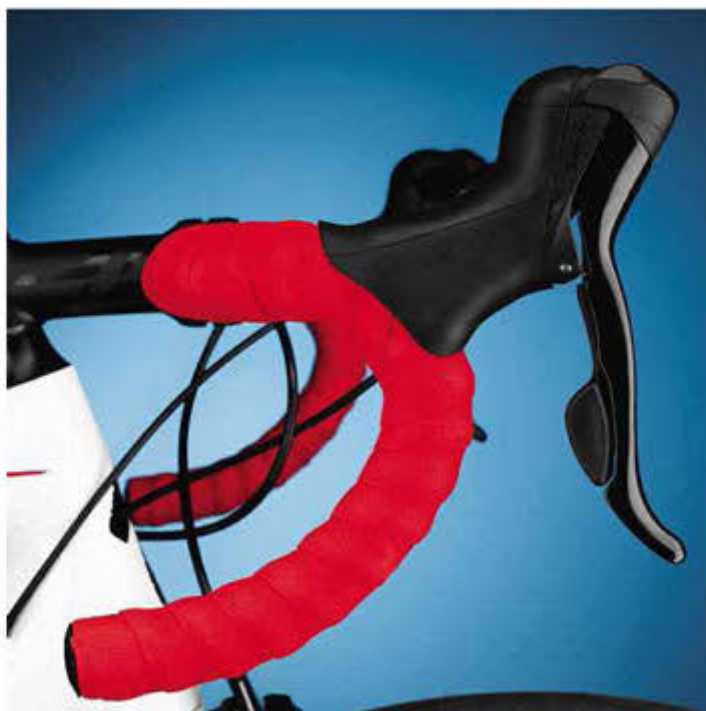
The Roubaix Double comes with a 9-speed Shimano Sora groupset and it's pretty much all there. The only exceptions to this are the brakes, but they're better than the Sora units. Braking power is excellent and they're fitted with cartridge pads, so replacing them is easy and cheap. The Roubaix comes with an 11-32 cassette so you've got a huge spread to take on almost anything. We have two complaints related to the front shifting: the lever required a few hard presses to get it to shift down to the little chainring. The same little lever also had a bad habit of getting stuck behind the brake lever, which sometimes made shifting impossible until it was pushed back into the correct position. Elsewhere, the finishing kit is all own-brand and just fine, but the standout is the CG-R seatpost. The top of this clever bit of kit has a dog-leg shape with a Zertz insert to fill the gap, giving 18mm of suspension. It's great to ride. When pedalling along normally, it doesn't bounce, and you can't feel any loss of power usually associated with suspension, but go over a big bump or pothole and you can feel it flex and absorb the impact. It's only available in one setback, though, so the resulting saddle position might not work for everyone.

Wheels


Money has to be saved somewhere and the wheels are fairly basic Axis items. They're quite heavy but strong enough and remained true throughout testing. The tyres are Specialized Espoir Elite. They have a low thread count so they're not especially supple or fast rolling, but they do have a folding bead, which at least makes swapping inner tubes that bit easier when you get a puncture.



Contact points are well looked after: the CG-R seatpost with its Zertz insert (above) adds 18mm of suspension, while padded bar tape (right) keeps the front end comfortable too



The ride

Going by the numbers, there was a danger that the bike would feel a little pedestrian but there's nothing to worry about – it's a pleasure to ride. Travel over badly kept roads and you barely notice the difference. Handling is predictable, so you can corner and descend with confidence, knowing that a few little bumps in the surface won't upset the whole bike. It also means you can forget what's going on under you and just enjoy the ride. Thick and spongy bar tape means it's comfortable at the front end as well as the back. It's not the stiffest bike under acceleration, but it doesn't claim to be, so you can let it off for that. By the end of the ride you'll still feel fresh – this is one of the most comfortable bikes you'll ever ride. Overall, it's a do-it-all road bike with a frame that is well worth upgrading with better wheels and, eventually, we'd be looking at a 105 drivetrain. 



RATING

FRAME

Well designed to fit the 'all-day comfort' brief

COMPONENTS

Excellent brakes and the Zertz seatpost stand out

WHEELS

Sed quis et ditem quas etio as ernation nonsequ upsi

THE RIDE

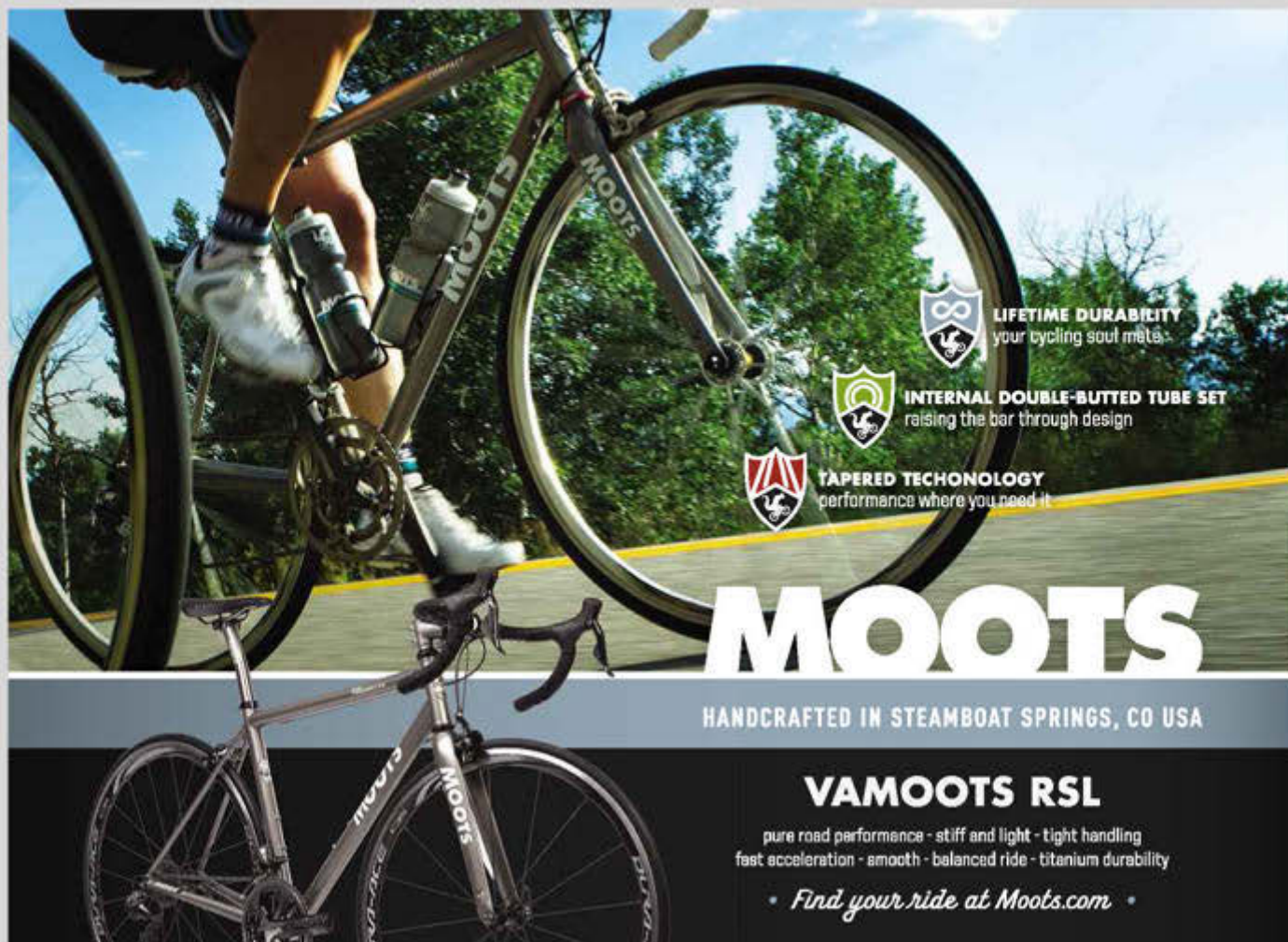
A real pleasure to ride – comfortable but not dull

OVERALL

8.5

10

The Roubaix is one of the most comfortable road bikes you'll ever ride



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Giant TCR Advanced 3 £1,099

A stiff and lively ride, but not without its flaws

About the bike

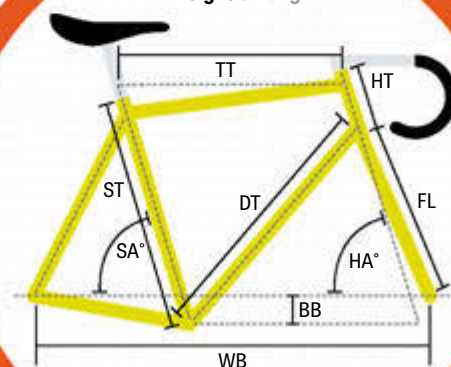
Giant's TCR has been around in various guises since the mid-1990s. The current range runs from the base model seen here up to the TCR Advanced SL 1 at the top end, a version of which is used by the professionals of the Giant-Alpecin team. The original aluminium TCR was the world's first compact road bike, with the distinctive sloping top tube and smaller rear triangle seen in most road frames today, so we were keen to see how far it has advanced since its breakthrough.



GEOMETRY

	Claimed	Measured			
			Head tube (HT)	150mm	150mm
Top tube (TT)	555mm	555mm	Head angle (HA)	73.0°	73.0°
Seat tube (ST)	500mm	500mm	Seat angle (SA)	73.0°	73.0°
Down tube (DT)		620mm	Wheelbase (WB)	985mm	980mm
Fork length (FL)		375mm	BB drop (BB)		74mm

Size tested **M**
Weight **8.40kg**





SPEC

FRAME

Advanced-Grade Composite frame and fork, Hybrid OverDrive steerer, Shimano pressfit BB

GROUPSET

Shimano Tiagra 10-speed

BRAKES

Shimano Tiagra

CHAINSET

Shimano Tiagra, 50/34

CASSETTE

Shimano Tiagra, 12-30

BARS

Giant Contact

STEM

Giant Connect

SEATPOST

Giant Vector Composite

WHEELS

Giant Tracker Sport Road hubs, Giant S-R2 rims

TYRES

Giant P-SL1, 23c

SADDLE

Giant Performance Road

CONTACT

giant-bicycles.com

Frame

The TCR Advanced frame is meant to be a good all-rounder although it leans towards the stiffer end of the scale. The finish is nice, inside and out, no doubt due the fact all TCRs are hand-made. The frame is oversized at the bottom bracket, and the head tube, for increased stiffness. Giant describes the geometry as 'race-proven', although you could also describe it as 'really long'. The 'medium' model

we tested is nominally a size 50 but the top tube is 55.5cm long, which is what some would call 'large'. It's worth paying close attention to the sizing, as even the smallest model has a 53.5cm top tube, so it might not suit everyone. The head tube is fairly tall at 15cm and the bottom bracket is quite low, with a 74mm drop, which should give it a stable feel. Head and seat tube angles are normal, both coming in at 73 degrees but the shortish (410mm)

chainstays contribute to a 980mm wheelbase, so it should be lively when it comes to cornering.

Components

The TCR Advanced 3 comes equipped with a full 10-speed Tiagra groupset but we're not huge fans. The current Tiagra groupset is a little older than the Sora 9-speed and 105 11-speed and it's starting to show. The STI units are an odd, bulbous shape



Internally routed cables give the bike a neat and tidy look but the front gear cable rattled annoyingly in the frame


and they don't fit particularly well in the hand. The pivot point on the brakes is also low down, which makes pulling hard on the brake levers difficult unless you're down in the drops. This is annoying, particularly because you constantly have to pull hard on them, because the brakes themselves aren't very good. The standard brake blocks are stiff, presumably to make them last longer, so the first time the brakes are applied, you'll be shocked by their lack of bite or power. The front derailleur is a bit better than Sora but not by a huge amount, and the shifting in general is a league behind the current 105. The remainder of the finishing kit is all Giant's own brand but this is no bad thing as it's all of a decent quality; the bars in particular are a really comfortable shape, and the aero seatpost is a nice touch. The saddle almost cut our tester in half but saddles are a personal choice so give it a try before binning it.

Wheels

The wheels and tyres on the TCR are all Giant's own brand again but that shouldn't put you off. The wheels are a bit heavy, which is to be expected at this price point, but they're sturdy enough. The first few feet elicited a tinkling of spokes as everything settled in, and they did have a little wobble by the end of our testing period, but nothing that caused us to be unduly concerned. The rear wheel comes fitted with a 12-30 Shimano Tiagra cassette so, in combination with the standard compact 50/34 chainset, you're covered for just about any hills you want to take on, regardless of the weight of the wheels. We weren't very impressed with the 23c Giant P-SL1 tyres supplied though. They lacked grip and feel and generally weren't very pleasant to ride. We'd rather see 25mm tyres come as standard, for the increased comfort they offer, and since the frame has plenty of clearance for wider tyres, it's hard to see why they don't.

The ride

Two things will strike you when riding, and the first is the length of the bike. The top tube on our test bike was really long in proportion to the overall frame size, which meant we were stretching to reach the hoods. The second was an infuriating rattle that can be attributed to the internally routed front derailleur cable. Once these foibles were

accepted and overcome, the TCR provided quite an enjoyable ride, with the frame proving stiff enough while still remaining comfortable, despite the skinny tyres. The relatively short chainstays, and short wheelbase in general (despite the long top tube), make the bike lively and the standard 73 degree angles keep the whole thing in check. The oversized frame and bottom bracket area transfer the power well without feeling like you're riding an ironing board. As soon as you pick up speed, the bike feels enormous and it's a long reach to the drops, which is particularly annoying because putting hands in the drops becomes essential due to the brakes. It's like being plonked on the bike rather than feeling a part of it and braking has to be done well before the corners to get speed down safely. It's a shame because the braking saps confidence and mairs what is otherwise a good ride. 




The aero seatpost (above) is a nice touch on a bike at this price; oversized bottom brackets and down tubes (right) for increased stiffness are a more common sight




RATING


FRAME

 The length of the top tube feels out of proportion


COMPONENTS

 Good apart from the odd-shaped Tiagra brake levers

WHEELS

 Decent own-brand wheels, not so great tyres

THE RIDE

 Lively enough but you don't feel at one with the bike

OVERALL

6.1
10

Poor braking saps confidence and mairs an otherwise lively, enjoyable ride



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Bianchi Vertigo £1,350

Does the Vertigo reach dizzying heights?

About the bike

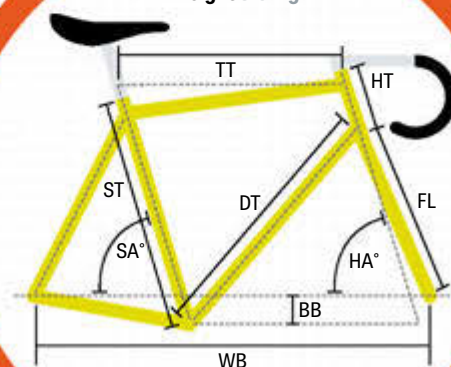
At £1,350, the Bianchi Vertigo is at the top of our price range, but the inclusion of a Campagnolo groupset swayed us to open our wallet a little wider – we've enjoyed our time on Campag-equipped bikes recently so it felt worth pushing the boat out. With Bianchi celebrating 130 years of bike building this year, the Vertigo lacks little in the way of heritage, but is heritage enough to compete with the new cycling nations like the USA, Taiwan or Germany?



GEOMETRY

	Claimed	Measured			
			Head tube (HT)	165mm	165mm
Top tube (TT)	550mm	546mm	Head angle (HA)	72°	71.9°
Seat tube (ST)	510mm	514mm	Seat angle (SA)	72.5°	72.1°
Down tube (DT)		592mm	Wheelbase (WB)		991mm
Fork length (FL)		371mm	BB drop (BB)	70mm	73mm

Size tested 54
Weight 8.67kg





SPEC

FRAME

Bianchi C2C carbon, comfort geometry, full carbon non-tapered fork

GROUPSET

Campagnolo Veloce 10-speed

BRAKES

Reparto Corse RC-471

CHAINSET

FSA Omega MegaExo Compact, 50/34

CASSETTE

Campagnolo Centaur UD, 12-27

BARS

Reparto Corse JD-RA35A Compact, alloy

STEM

Reparto Corse AS007 Alloy

SEATPOST

Reparto Corse SP-TEC-2 alloy

WHEELS

Reparto corse Road Runner

TYRES

Vittoria Zafiro Pro Slick, 25c

SADDLE

San Marco Era Startup Power

PRICE

£1,350

CONTACT

bianchi.com

Frame

Bianchi has pitched the Vertigo at the sportive rider making their first foray into carbon fibre, or buying their first serious bike and bypassing other materials. With its distinctive looks and obvious heritage, it has proved to be one of Bianchi's most popular bikes and a 'Dama Bianca' women-specific version is also available. Coming in at a keen price means fewer sizes are available than Bianchi's

other 'endurance' bikes, but the spread is still there, from 48 to 60cm in 3cm increments. Chainstays are slightly longer than a race-focused bike, adding a little comfort as well as making the bike feel more stable at speed. The chainstays themselves are massively oversized and we didn't notice any delay in acceleration coming from the area despite the length. The endurance geometry had us scratching our heads a little – to make the top tubes on these

bikes a little longer (necessary due to the reduced size range) the seat angles are slacker than normal, a measured 72.1 degrees compared to a more typical 73-73.5 degrees. With the taller head tube, this has the effect of rotating the rider backwards around the bottom bracket. While raising the bars will open up the hip angle and feel more relaxed, rotating the whole rider doesn't do the same thing, and the position still felt quite



Chainstays are longer than usual for increased comfort but being oversized means there's no loss of power

racy to us. We've recently seen endurance bikes return to 27.2mm seatposts in search of increased flex and hence comfort, but Bianchi persists with an oversized 31.6mm unit here, in contrast with the front end, where a straight 1.125in fork steerer is used instead of a tapered unit. We've never worried about a lack of stiffness from the straight standard, and the potential for extra comfort is welcome.

Components

Campagnolo Veloce may only be 10-speed but it's a joy to use – the levers are a great shape, the hidden cable routing is neat and classier than Tiagra and Sora, and the shifting is fast and crisp. Bianchi uses its own-brand dual-pivot brake callipers, which are remarkably powerful, inspiring confidence on descents. The own-brand bars are a good shape but a 110mm stem feels excessive given the length of the top tube. Likewise, the slack seat tube angle means a layback seatpost is unnecessary and we had to run the saddle all the way forward to achieve a comfortable position. The saddle itself, a San Marco Era Startup Power, has zero redeeming features, being shiny, awkwardly shaped and uncomfortable – we had to run it pointing dramatically skywards to avoid sliding off the nose.


Wheels

Bianchi once again specs its own wheels on the Vertigo and they're perfectly good – the spokes are a paired design, where the drive and non-drive side spokes counteract each other's forces, but they're not evenly spaced like a normal wheel. The hubs engage positively and use easily replaceable cartridge bearings, while the rims brake well. Another Italian brand, Vittoria, supplies the tyres in the shape of the Zaffiro Pro Slick, which are 25mm wide and proved plenty grippy enough during our test period.

The ride

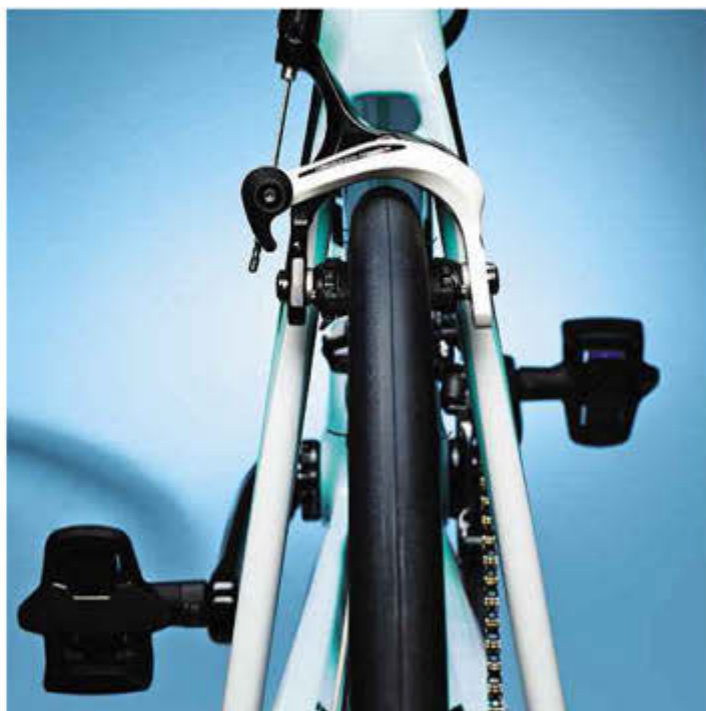
It's amazing how big a difference a degree can make. The slack seat angle combined with the layback post meant that we felt creased up on the Vertigo. The intention behind the geometry is to place the rider in a more upright position to increase comfort, but because the whole bike is practically rotated backwards around the bottom bracket, that



ambition is unfulfilled. Because we still needed to place weight over the front wheel to corner confidently, we were constantly sliding forwards on the saddle to place our centre of gravity more optimally between the wheels. The first thing we'd do if we owned the Vertigo would be to replace the saddle with a more supportive model, and the seatpost with an in-line version that allowed us to sit further forward. If, however, you have particularly long thighs, you may find the Vertigo the ideal shape for you. Peculiarities of fit aside, the performance of the components was great – the Campagnolo groupset is superb, the brakes effective and the wheels roll fast and smooth. We've always loved Bianchi's trademark celeste colour, but we'd prefer it if the frame lines were a little more subdued. For the right shaped rider, the Vertigo will be a great bike, but for our testers, the fit was a major barrier to enjoying the ride. 



The Campagnolo Veloce brake levers (above) are a great shape, while Bianchi's own-brand dual-pivot callipers (right) provide excellent braking power



RATING

FRAME

Comfortable but let down by quirky geometry

COMPONENTS

A shorter stem and inline seatpost would improve fit

WHEELS

Well-chosen own-brand wheels, good Vittoria tyres

THE RIDE

The odd geometry affects confidence with handling

OVERALL

6.1

10

The tall head tube and slack seat angle rotate the rider around the bottom bracket

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"We love this tool for all of its features and functions" 5"

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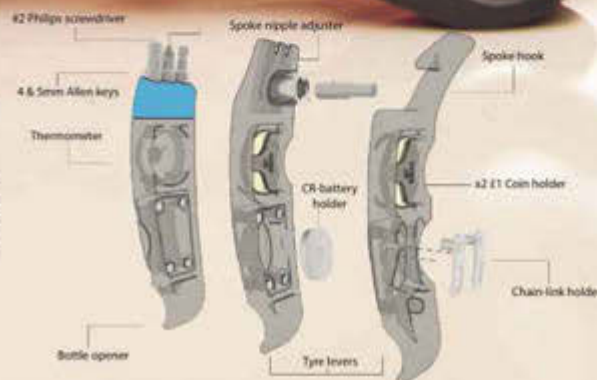
"...a rather clever multitool that packs in the essentials plus a few bonuses we're not used to seeing."

BikesEtc

"...the Multilever is both light and pretty much indestructible"

cyclr

"hard to fault a product that does everything well."



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Trek Émonda S4

A comfortable ride that inspires confidence and encourages you to push your limits, with plenty of scope for future upgrades – the Émonda S4 is a great sportive bike whatever your budget



Back in issue five, we reviewed bikes around £1,000. If you're happy with an aluminium frame, we found you could pick up a bargain – the winner was the Pinnacle Dolomite 6, which weighs 8.74kg, costs £950 and comes with a full 11-speed 105 groupset. So for an extra £250, what do you get?

The answer is, of course, carbon fibre. All the frames here are carbon, and despite the additional budget, all but one has been reduced to nine or 10-speed to allow for the upgrade to a lighter, more compliant, stiffer material. What you're really buying in most instances here is a starting point: a great sportive-ready frame with relatively inexpensive components that can be upgraded as and when.

The Bianchi Vertigo is an outlier in many ways: the only Campagnolo-equipped bike here, we appreciated the spec but could not easily achieve a comfortable riding position without swapping the saddle and seatpost.

The Giant TCR has a nice frame but is racier than we want from a sportive bike – the reach is long but the wheelbase is compact for fast handling – and it got marked down as a result. In many ways, the Cube receives similar criticism but the spec is so good for the money – it's the only bike here to feature Shimano's excellent 105 – it was hard to overlook.

The two US giants, Specialized and Trek, were the brands that came closest to fulfilling the brief of a great sportive bike. The Specialized Roubaix is a long, comfortable bike, which translates to predictable handling and confidence on rough, or steep roads. It never feels sluggish though, and the fact that it keeps the rider feeling fresh is a huge advantage. It may be only nine-speed, but is well worthy of upgrades later on.

Likewise our test winner, the Trek Émonda: we loved how comfortable it is and how much confidence it inspires. Like the Roubaix, the Émonda's frame is ripe for upgrading, and when finances allow, a 105 groupset would be a great idea. Even as it is comes, though, Trek has produced a worthy winner.

HOW THEY STACK UP...



CUBE AGREE GTC PRO
£1,199

TREK ÉMONDA S4
£1,200

SPECIALIZED ROUBAIX
SL4 DOUBLE £1,300

GIANT TCR ADVANCED 3
£1,099

BIANCHI VERTIGO
£1,350

FRAME

COMPONENTS

WHEELS

THE RIDE

OVERALL

8.1

8.9

8.5

6.1

6.1

The road beckons.



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COME OUT OF YOUR SHELL

Somewhere between a regular jersey and a winter jacket, these tops aim to keep you happy whatever the weather



There's nothing glam about the UK's weather – not for us the freezing depths or blistering heat of countries at extreme latitudes. The caricature of the weather-obsessed Brit owes a debt to our changeable climate, which defies any notion of seasonality. Even in the height of summer, clear skies in the morning are no guarantee you won't be shivering in the rain by lunchtime, only to roll home for tea in glorious sunshine. The traditional response to this was to jam a waterproof shell in your jersey pocket.

These do a good job of keeping off the wind and the rain but have a tendency to flap about, and you're constantly changing in and out of them. Luckily, improvements in textile technology such as stretchy yet waterproof fabrics have spawned a new type of jersey: one that remains close fitting and breathable but also packs in water and wind resistance. Useful when it's possible to experience three seasons worth of weather in a single ride. We've tried ten current models in all weathers to find out which is the cream of the tops. 



Etxeondo WS Team

£155 (currently £139.50)

Beautifully made and stylish option from the Spanish brand that still produces all its clothing in-house. Constructed of Goretex Windstopper fabric, it laughs off downpours while never feeling clammy. Despite effectively blocking windchill, the jersey provides little additional insulation, leaving it to the rider to gauge conditions and select the appropriate base layer. Not that this is really a complaint – if anything increases its versatility. Used by the Giant-Alpecin pro team, it's no surprise the cut is race orientated. Grommets in the three rear pockets allows water to drain out while the stripe on the back not only looks good but also adds reflectivity. It isn't cheap but it's a quality jersey and the inclusion of a pair of matching Windstopper arm warmers helps justify the outlay. alwaysriding.co.uk

Rating

WEATHERPROOFING

VALUE

FIT

OVERALL

9

10



Endura FS260-Pro Jetstream Jersey

£68

Designed for milder conditions than most of the other jerseys on test, the FS260-Pro uses a windproof front panel to keep the upper body warm, while the back panel is much lighter traditional jersey material that allows moisture and hot air to escape. You'll still need a decent base layer but the race-inspired fit and long-ish sleeves make it a fast ride favourite. Endura's fit is on the large size, so our 1.77m deputy editor is wearing a small on the cover. This is the sort of garment racers love, but on club runs at less than maximum effort, we'd recommend layering up as the way to go. In the right conditions though, particularly cool mornings that turn into warm days, this is a great choice. endurasport.com

Rating

WEATHERPROOFING

VALUE

FIT

OVERALL

7

10



Café Du Cycliste Josette Jersey

£140

Although athletic, the Josette's fit isn't as svelte as some of the others here, exacerbated by the fact it uses a relatively stiff fabric. This results in the front of the jersey not sitting quite as flush as we'd have liked. Deciding against cutting the back of the jersey low also seems like a bit of an oversight, especially when many of its rivals do such a good job of keeping your backside protected. However, it does mean that the Josette looks the most 'normal' when worn away from the bike, which may be a consideration for some. Comfortable down to around 5°C, the waterproof fabric is easily a match for the heaviest of downpours, while a rubberised zip keeps water locked out. A flap overhanging the three rear pockets stops them becoming swamped. While the fit isn't quite up there with the best, this would still be a good cold weather choice.

cafeducycliste.com

Rating

WEATHERPROOFING
VALUE
FIT

OVERALL
7
10



Gore Oxygen Windstopper Soft Shell

£110

Goretex Windstopper fabric makes up the front and sides of this comfortable and breathable jersey. These extend over the shoulders and wrap around the lower back, helping to keep your kidneys warm. Not only does this stop your core temperature from dropping but should also see you taking fewer nature breaks, as cold kidneys can make you feel the need to wee more often. The cut is slightly less racy than some others with the sleeves noticeably less tight, making them less suited to clamping arm warmers in place. A zippable compartment on the middle of the three rear pockets is ideal for securing your house keys. Although the Windstopper panels block rain from your chest, the rest of the jersey won't put up much resistance in wet weather, making this best for cold but sunny days.

goreapparel.com



Santini Reef

£140

Setting out for our first ride in the Reef, it was already raining, and we were instantly impressed by the way water rolled off, while the substantial rear flap kept road spray off our shorts. It's not the warmest jersey though, so take Santini's advice and layer it over a regular jersey – this also improves comfort, since the panelled construction means lots of thick seams. Wide rubber sleeve grippers are good at keeping arm warmers up, snug but not restrictive. By contrast, the neck is loose, but that's no bad thing – worn over another jersey, a closer fit might be uncomfortable. On the rear are two large reflective panels and two capacious waterproof pockets, which are useful, though a lack of drainage or closure means they can collect water.

fisheroutdoor.co.uk

Rating

WEATHERPROOFING
VALUE
FIT

OVERALL
7
10



Rating

WEATHERPROOFING
VALUE
FIT

OVERALL
7
10



**Castelli Gabba 2****£150**

The snow-affected 2013 edition of Milan-San Remo could be the first bike race in history to be better known for an item of clothing than who won it. But whether or not half the peloton really were wearing Castelli's Gabba that day, what matters for our purposes is: does its performance match the legend? In short, yes. For such a thin, light garment, it's incredibly warm and weatherproof, fending off proper wintry conditions in testing. In fact, the Gore Windstopper X-Lite Plus fabric is waterproof enough that the three rear pockets require mesh inserts for drainage. It's stretchy enough to provide a snug, aerodynamic fit (non-racers may prefer to go one or two sizes up for comfort) and yet it's very breathable too, so you won't overheat even if the sun does come out. With cheaper rivals now offering almost as good performance, the premium price tag may be a deal breaker for some, but the Gabba remains head of its class.

saddleback.co.uk

Rating

WEATHERPROOFING

VALUE

FIT

OVERALL

10

10

**Rapha Pro Team Soft Shell Base Layer****£80**

What's a base layer doing in among a bunch of jerseys? Well, this one aims to take the properties usually associated with a softshell and move them below. It's a novel approach but while it does an excellent job of repelling the elements, you'll still be left with a soggy jersey. That said, we really liked its windproof abilities and it's a good price for what it offers. In many ways it's a good insurance policy against changeable weather conditions. Even on milder days, you're unlikely to overheat thanks to stretchy breathable panels that run from the pits to halfway down the torso. It's origins as a product developed for pro teams is evident in the close fit.

rapha.cc

Rating

WEATHERPROOFING

VALUE

FIT

OVERALL

8

10

STAY COMFORTABLE, RIDE FASTER.

Nicky Hussey, founder and head of R&D at clothing brand Vulpine explains why staying dry and comfortable will not only keep you happy but can also boost performance



Comfort is part of performance, not just from an experiential point of view, but also because of the way it affects body temperature. We're talking morale and vital signs. Water will cool you very fast, as its potential to carry heat energy is far greater than air. I use pure merino wool for most of our skin-contact tops because it is hydrophilic, pulling water away from the rider.

Many commentators were sneering at the use of mini saddle mudguards in Milan-San Remo. This is not 'wussing out' but very forward thinking. First, cold water down your

back, kidneys and buttocks is demoralising. More importantly, it is cooling areas that take a bashing in long, hard races, potentially affecting performance. Then there's weight. We'll pay through the nose to swap out titanium bolts for a few grams of weight loss, but wet clothing can be kilos heavier. So it makes sense to prevent it getting wet to begin with. This is more than just a marginal gain. Road spray loses races.





Vermarc Zero Aqua £102

The Zero Aqua's body-hugging fit and minimalist stealth-black design make it hard to resist comparisons with the daddy of all-weather jerseys, Castelli's Gabba. The soft, stretchy material feels a little thicker and heavier but scores highly for comfort and slick pro looks – but without the pro-level price tag. With a fairly high neck and sleeves that stop just short of the elbow, it provides good coverage, and a bum flap keeps road spray off your rear end. Another flap over the three rear pockets keeps rain out while leaving them more accessible on the move than zips. During testing, it performed admirably in some appalling weather and very low temperatures, but excellent breathability makes it eminently suitable for milder spring conditions too.

chickencycles.co.uk



Alé Klimatik SS Jersey £120

Surprisingly, considering its Italian origin, the Klimatik's fit isn't too snug – the flexibility of the fabric helps. Not that there's any flapping of excess material, despite the unisex design. The stretchy fleece-backed fabric has a hydrophilic treatment that causes water to bead and roll off before soaking through. However, heavier showers or those with some wind speed behind them will eventually find their way in. Although it'll keep you fairly warm, don't expect the same wind resistance provided by a membrane-backed fabric. The three rear pockets are constructed of much more water-resistant laminated material. Although they don't feature zips, a clever envelope design keeps water out and your valuables in. This waterproof section extends to the bum flap, protecting you from any spray thrown up by the rear wheel. Reflective details and a heat-trapping collar round out a well-made and stylish package.

paligap.cc



Stolen Goat Orkaan Race Tec £108

We featured the Orkaan in our First Ride section in issue 5 and initial impressions were good. However, seeing it in such esteemed company made us begin to wonder if perhaps it isn't a little under-featured at its price. It's well cut, though, its long sleeves both keeping your upper arms warm and clamping warmers in place. Still, it seems pricey for what is essentially a relatively conventional jersey. Then it started to rain and we remembered what it was we liked the first time we tried it. While shell laminate fabrics normally do a good job of keeping out rain, most woven fabrics that claim hydrophilic properties tend to wet out pretty rapidly. Not the Orkaan – only the heaviest rain will force its way through. The feel and stretch of the soft lined fabric is extremely comfortable directly against the skin, while also remaining very breathable.

stolengoat.com



Body wrap

These sleeveless stowaways are the unsung heroes of cycling couture



Somewhere between your first set of clipless pedals and your Tour de France debut comes your first gilet, another odd-looking piece of cycling attire for your friends to scoff at. Until you've used one, it's hard to grasp just how useful these strange sleeveless jackets are. Watching footage of old bike races, you might have seen riders approaching the summit of a climb being passed newspapers by fans at the roadside. Shoved down the front of a jersey, they help fend off the worst of the wind-chill on the descent, preventing the rider's core temperature from dropping too low. A gilet does much the same job, staying stashed in a jersey pocket until it's needed, when it helps you quickly react to changing conditions. Although less informative and more costly than some soggy newsprint, a gilet is definitely worthy of a spot in your cycling wardrobe. Here are some of the best on the market.



Giro Pertex Wind Vest £65

While a gilet is a cycling essential – especially for the transitional months of spring and autumn – it could never be called a statement garment. Functional, yes, but it's never going to draw attention to itself. That is unless you choose the Wild Lime or Glowing Red versions of Giro's lightweight core-warmer, which live up to their names. Made from moisture-wicking fabric with a breathable mesh in the back, we found that while it kept us warm in the face of chilly morning winds, we never overheated. Fitting-wise the large was realistically sized and a close but comfortable fit. It's also available in Jet Black and Pewter but we'd recommend going for one of the bolder colour options – we're not saying it necessarily made us more visible on the road, but the Glowing Red certainly was easy to locate in a pile of washing. zyro.co.uk



Rating

PACKABILITY
WEATHER PROOFING
FIT

OVERALL
8
10

Pearl Izumi PRO Barrier Lite £70

If it's light you're after then they don't come more gossamer than this – weighing in at 52g, this gilet is as unobtrusive on your back as it is in your jersey pocket. The reflective strips are a nice touch although they are the only notable feature; this gilet is the very epitome of less-is-more. While not designed for heavy weather, it effectively cuts down on wind-chill on chilly spring mornings and is water-resistant enough to hold off light showers. Part of Pearl's PRO range, we assumed it would be cut for a more aggressive riding position so upsized to a large. However we found it flapped about in the wind a bit, so unless you can try before buying, stick to your normal size. Another thing we noticed was that our courier bag slid around on the smooth surface of the gilet – not a problem on a club ride but a bit of a pain when commuting. madison.co.uk



Rating

PACKABILITY
WEATHER PROOFING
FIT

OVERALL
9
10



Proviz Reflect360

£50

More commuter-focused than the other gilets here, the Proviz is made entirely of an extremely reflective material – even a moderately powerful bike light will illuminate the rider in an eerily bright and attention-grabbing glow. This makes it a good option for rolling home from work or perhaps after an evening race. Bulky fabric and a cut that might politely be described as ‘accommodating’ means it requires some stuffing to get into a jersey pocket, though it will just about fit. Its boxy proportions aren’t particularly flattering, so you’ll probably want to go at least a size down. The generous sizing also rendered the elasticated cuffs and waist slightly redundant as wind and rain can sneak in. Still, wind and water resistance of the fabric itself is good and the perforated back helps to prevent overheating.

provizsports.com



Rating

PACKABILITY

WEATHER PROOFING

FIT

OVERALL

4

10

Briko Piuma

£30

The cheapest item on test, the Briko Piuma begs the question how much do you want to spend on a gilet? They’re never going to be the most stylish of items, but the Piuma isn’t bad looking for all that. A comfy mesh lining on the collar is complemented by a short storm flap that extends a couple of inches down the neck, keeping out wind-chill where it’s most noticeable but leaving the lower portion of the zip unobstructed. This should provide for easy on-the-bike dressing, although the minuscule slider on the zip can make this a slightly fiddly operation. Luckily, this is easily remedied with the addition of a loop of string to create a more sizable pull. Once on, the water and wind resistance offered by the fabric is excellent, while access to your jersey pockets is provided by a large slit across the back. A well thought-out option for the budget-conscious.

chickencycles.co.uk



Rating

PACKABILITY

WEATHER PROOFING

FIT

OVERALL

8

10

Madison Road Race Windproof

£45

Ideal for those chilly spring summer mornings when you set off before the sun has had a chance to get to work, this is an impressively lightweight and packable gilet that will easily fit in a jersey pocket when no longer needed. The front and shoulder panels are made of ripstop nylon with first-rate windproofing qualities, while the mesh back panel gives excellent ventilation and further keeps weight down. Though not intended as rainwear, it is water-resistant enough to be serviceable in light showers, and the generous single zipped rear pocket is fully waterproof. A pro racer-oriented fit means finding the right size could be a case of choosing between snug-round-the-waist medium or slightly-baggy-round-the-shoulders large, but it’s a great choice if you’re the right shape.

madison.co.uk



Rating

PACKABILITY

WEATHER PROOFING

FIT

OVERALL

8

10

Vermarc Transparent Rain

£42

A no-nonsense garment with a no-nonsense name that tells you exactly what it's for. Worn over a team jersey, it's see-through enough to read your sponsor's logo and race number, and the blend of polyurethane and polyester gives it excellent water-repellency, as well as making it windproof, durable and resistant to tearing. The stretchy fabric, close fit and elasticated arm holes and waist ensure it shouldn't flap in the wind too much, and its distinct lack of breathability isn't really a problem since you'll only be wearing it if conditions truly require it – it fits comfortably in your jersey pocket the rest of the time. One thing we're not so keen on is the shiny finish that feels rubbery to the touch, and if its frills you want, look elsewhere: there's not so much as a single pocket. chickencycles.co.uk



Rating

PACKABILITY

WEATHER PROOFING

FIT

OVERALL

8

10



Endura Pakagilet

£33

Packing down to the size of a mini Coke can, the Pakagilet takes up minimal space in your jersey pocket – it came out top in our packability test despite some stiff competition in this respect. Stiff storm flaps in front of and behind the zip help prevent wind and water finding its way though. A high collar and elasticated trim on all the apertures further seal out the wind. The fabric itself is moderately water resistant – probably as much as you really need in this type of garment. Breathability is respectable too, although a large mesh panel on the rear means you're unlikely to overheat anyway. A gap between this section and the extended bum flap (which is replete with reflective detailing) allows easy access to your jersey pockets. Available in a range of colours – black, white, red and hi-vis yellow – it even comes with its own neat stuff sack. endurasport.com



Rating

PACKABILITY

WEATHER PROOFING

FIT

OVERALL

9

10

Rapha Lightweight Cycling Gilet

£125

Ah, Rapha, what price style? This gilet is more than double the price of some of the other gilets on test and offers the same combination of windproof, wicking and breathable fabrics. And yet... the devil is in the detail. Unlike most gilets, this offers two elasticated cargo pockets at the back and an additional zipped one at the front. Those who question the point of having pockets in an item that you're supposed to be able to take on and off depending on the conditions will be highlighting the contradiction in this garment: while it indeed weighs very little (115g) and fits in a jersey pocket (just), it feels like something you want to keep on rather than stash away. We found ourselves forgoing a base layer and wearing this on for the duration of the ride instead. We were warm and dry but also knew we looked good along with it. rapha.cc



Rating

PACKABILITY

WEATHER PROOFING

FIT

OVERALL

8

10



PRO SKILLS

Team ONE Pro Cycling's road captain Yanto Barker on the art of on-bike costume changes

#1 With the collar upmost and the zip undone, roll the gilet up starting from the bottom.



#2 Once it's safe to do so, reach around and remove it from your jersey pocket.



#3 Holding the collar, keep the gilet up high and to one side, away from the wheels.



#4 Hands off the bar and looking ahead, sit up and put on the gilet one arm at a time.



#5 Still with your eyes on the road, find the zipper and do it up. Easy. Now enjoy the warmth.



If you're riding an event on a closed road, you can change into and out of a gilet while on the move. These are the key things you need to be aware of.

PREPARATION

Stow the garment the correct way round. This is less serious with a gilet but if you're trying to put on a garment that has sleeves it's crucial they're not inside out.

CHOOSE YOUR SPOT

Be wary of gaps between buildings, hedges and gateways where wind can gust through, blowing you off course. Leave room between yourself and other riders too.

LOOK AHEAD

Keep looking ahead for obstacles – not down at the zip. And be quick. Every second longer you take increases the risk of an accident.

Altura Core

£40

Made of a windproof and waterproof softshell fabric, the Core is perhaps more of a lightweight sleeveless jacket than a packable gilet. In fact, it's bulky enough that stowing it in a jersey pocket isn't at all practical, so you'll want to reserve it for days when it's not cold enough for a full jacket but you don't expect conditions to improve. While it's very good at keeping your torso warm, it isn't all that breathable and the cut isn't obviously cycling specific – we would have preferred it a bit longer at the back. These qualities and the decision to give it two zipped hand pockets rather than the more usual rear pockets add up to a garment that is more suited to the relaxed Sunday rider than the racer (for a sportier option, Altura's Raceline Gilet would be a better bet). This is also reflected in the large-means-large sizing.

zyro.co.uk



Rating

PACKABILITY

WEATHER PROOFING

FIT

OVERALL

6

10



Stolen Goat Bodyline Lion Heart

£72

Emblazoned with a Flandrian lion, as flown by many of the Belgian fans who flock to watch the spring Classics, this gilet is actually produced by Belgian company Bioracer to Stolen Goat's design. The front panels are constructed from an extremely stretchy yet waterproof fabric, Lycra panels run down the sides while an even more pliable mesh back keeps you cool, and elasticated apertures allow access to jersey pockets. All this stretch coupled with a form hugging cut means there's no excess material to flap around. Nevertheless you're unlikely to overheat, so we were happy to keep it on for longer rides. The flip side of this is that it doesn't provide as much protection from rain as some others. It's also available in more muted designs but sizing is petite so consider going up. A great choice for faster rides.

stolengoat.com



Rating

PACKABILITY

WEATHER PROOFING

FIT

OVERALL

9

10

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THE BOTTOM LINE

Are you sitting comfortably? If not you'll appreciate our in-depth look at 12 of the best places to park your bum while out cycling

 Saddle design exists at the frequently uncomfortable interface of technology, ergonomics and fleshy human bottom. Supporting the majority of a rider's weight, it's unsurprising that finding a comfortable perch is one of cycling's perennial quests. A lot of soft and important junk lives next to your ischial tuberosities (that's the sit bones, to the non-anatomically minded) and not all of it appreciates being squished. Add to this that different riding styles will put pressure on different areas of the saddle and your anatomy, and navigating the range

of available options can become a real pain in the bum. Even a saddle that initially seems comfortable can suddenly turn against you on a longer ride. Fresh legs will usually support a good proportion of your weight, but as their strength fades, more weight shifts to the saddle, increasing pressure and potentially leading to discomfort, which is why a quick spin outside the bike shop isn't always enough for you to find your perfect match. We applied our collective posteriors to 12 saddles, racking up hundreds of miles to get to the bottom of the matter and find out what makes a comfortable seat.



PRO Turnix AF £80 197g

First impressions of the Turnix are that its padding is very thin and firm, but with its carbon-reinforced base and titanium rails, there's actually a good degree of shock-absorbing flex when you come to ride it. The semi-round profile with a slight flick up at the tail is designed for riders who keep the body fairly stable when pedalling, while giving a bit more comfort than a flat racing saddle. AF stands for 'anatomical fit', referring to the central cutout, which we found effective for both pressure relief and ventilation. Surprisingly, it came in under the claimed 205g, tipping our scales at 197g – lighter saddles are available but at this price, that's impressive. The Turnix comes in two widths, with or without the cutout, and for serious weight weenies with more money to spend, it's also available with carbon rails – the saddle selector app on the PRO website (pro-bikegear.com) will help you choose the right model. madison.co.uk

Rating

INSTANT COMFORT
LONG RIDE SUPPORT
VALUE





Brooks Cambium C15 £116 420g

The Brooks Cambium might look like a large departure from the company's traditional leather saddles, but dig a little deeper and the genetic line is clear. It uses a thin layer of vulcanised rubber, suspended in tension between the front and rear of the saddle, retaining the 'hammock' construction of the classic leather design. The flexible upper moulds to your shape and provides even and well-distributed pressure, and the rubber construction even dampens some road vibration, which is a real

plus. The C15 tested is the narrower of the Cambium options; the wider C17 model is also available in a women-specific shape (C17s). Beautifully made die-cast aluminium fittings retain the traditional riveted look, which is complimented by the cotton canvas cover, making this saddle the obvious choice for the style conscious. All that comfort and style does come at a weight penalty but that should only put off the most gram-conscious rider.

extrauk.co.uk

Rating

INSTANT COMFORT

LONG RIDE SUPPORT

VALUE

OVERALL

8

10



BikesEtc
BEST IN TEST



Fabric Scoop Race (shallow) £60 257g

Fabric makes a wide range of saddles in several widths and profiles. Its website has a neat tool for determining your somatotype, or underlying bone structure. Having imputed his height and wrist diameter, it determined that our tester was a mesomorph, and would suit the 142mm wide Scoop saddle in the shallow profile option – a middle-of-the-road option between racy and upright riding style. Our tester's backside was inclined to agree with Fabric's prescription. The gently curving

shape was instantly comfortable and remained that way on longer rides. Profile-specific padding provides a generous amount of squish without feeling unsupportive, while its smooth riding characteristics are further enhanced by the flexible shell and titanium rails increase the dampening effect. The sleek looking construction isn't just cosmetic: the smooth moulded cover means there's little chance of it either rubbing or soaking up water. fabric.cc

Rating

INSTANT COMFORT

LONG RIDE SUPPORT

VALUE

OVERALL

9

10



Fizik Aliante VS £90 256g

Fizik offers a noticeably different saddle selection system to most, using its 'Spine Concept' philosophy based on rider flexibility, rather than the more typical width-based measurement. Each model is ascribed a corresponding animal – in the case of the Aliante, the profile is designed for the least flexible 'Bull' type rider and is available in several options. The VS version on test is topped with a plush layer of low-density foam with a 5mm-deep central pressure-relieving cut-out along its length.

It makes for a comfortable ride that will suit racers and sportive riders alike without any need for a bedding-in period. The sides of the Aliante have a low-friction material to reduce chafing on the inner thigh, which is a neat solution, but this certainly wasn't as effective as the thinner noses on some of the other saddles on test which remove the contact completely. Fizik offers an extensive demo programme, so you can try before you buy. extrauk.co.uk

Rating

INSTANT COMFORT

LONG RIDE SUPPORT

VALUE

OVERALL

7

10





Forza Cirrus £50^{287g}

Rating

INSTANT COMFORT
LONG RIDE SUPPORT
VALUE

OVERALL
6/10

On a cursory first inspection, we feared we weren't going to get on with the rather chunky-looking Cirrus because of its very deep padding – it may seem counterintuitive but excessive padding can cause discomfort and numbness due to the way it deforms under your body weight. However, when it comes to actually riding it, the foam on the Cirrus feels fairly dense and supportive, so it's not at all like sitting on a soft cushion, plus it has a deep central pressure-relieving groove that runs almost

its full length. Lengthways, the Cirrus is fairly flat, but its slightly rounded profile at the rear is more accommodating to 'normal' riders who may find a totally flat saddle too harsh, while the nylon base is fairly flexible, further improving comfort. On the whole, a decent saddle that's good for its relatively low price, despite its somewhat agricultural looks – and given that it's designed for sitting on rather than looking at, that might not be such a problem. todayscyclist.co.uk



Ergon SR3 £85^{253g}

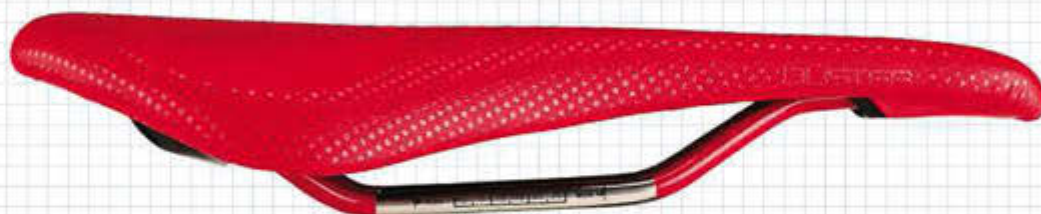
Ergon is a name synonymous with ergonomic products for mountain biking but here we have the brand's first foray into the road sector, and it doesn't disappoint. Manufactured in Italy by saddle giant Selle Italia, the SR-3's well-engineered composite shell provides plenty of give, making the saddle feel much more supple than its aggressive, streamlined look would suggest. The tailored padding – denser where it's needed, thinner where it isn't – is well thought out and comfortable, while remaining

firm and supportive enough for the rider to retain a direct-feeling connection with the bike. The wide back end of the saddle gives a decent platform to perch on, although the slight upward curvature at the tail provided only limited additional support that didn't translate to much benefit on the road. The SR-3 is available in three widths so it should be easy to find a good fit, and a version with carbon rails is available for those seeking something lighter. extrauk.co.uk

Rating

INSTANT COMFORT
LONG RIDE SUPPORT
VALUE

OVERALL
7/10



SDG Duster P Ti-Alloy £70^{232g}

Rating

INSTANT COMFORT
LONG RIDE SUPPORT
VALUE

OVERALL
8/10

Long a favourite among cross-country mountain bikers, the Duster is an equally accomplished performer on the road. Put aside any concerns about whether a saddle beloved of fat-tyre riders could suit a roadie because the Duster's profile is actually fairly narrow. Paired with the long, flat nose, that means plenty of room to shuffle forwards or backwards. Sitting above titanium rails, the edges of the Duster's base are made of a flexible rubber material to aid pedalling efficiency, while the centre

remains stiffer to support the rider. A good amount of mid-density foam sits above this, down the centre of which runs the 'Peri-canal', a groove designed to relieve pressure on soft tissue. It's an unobtrusive system and we experienced no numbness even on extended rides. Great looking, with minimal branding – we were even deceived into mistaking the covering for leather. In fact the microfibre top means this saddle is vegetarian friendly. silverfish-uk.com



Prologo Nago Evo T2.0 £85 258g

The Nago Evo from Prologo is a clean, simple and well-designed saddle that will suit many riders. Its fairly neutral unisex profile is classed as 'semi-round', which is Prologo's jack-of-all-trades, for mid- to long-distance rides, in between the rounder models focused on all-day comfort and the flat racing-oriented ranges. The compliant carbon fibre shell is well complimented by tailored padding – what Prologo calls 'Active Density Control'. What this means in practice is that the saddle is softer

towards the nose. A big plus for larger riders is that the nose of the saddle is relatively thin, giving plenty of room for your thighs to hammer away on the pedals without any interference. The Nago Evo is available in two width options and as well as the chrome rails on our test model, it also comes with the option of titanium or carbon rails. As you would expect from such a large manufacturer the production quality is excellent.

i-ride.co.uk

Rating

INSTANT COMFORT
LONG RIDE SUPPORT
VALUE

OVERALL
8/10



Selle Italia SLR Team Edition £115 185g

Selle Italia's saddle design for riders with narrower sit bones, the SLR has long been a favourite among racers. While this titanium-railed version adds a small amount of extra padding versus more expensive iterations, it's still a pretty minimalist perch, as suggested by the lowest weight on test. With little padding, comfort will derive from having the saddle match your physique; something a retailer with the 'idmatch' system should be able to help you with. The flexible base provides excellent

vibration dampening. With a more pronounced radius when viewed from the front than its stablemate, the Flite, your legs have little chance of chafing against the edges. Viewed from the side, you can see how little the SLR's edges extend towards the rails, which further increases freedom of movement. Eminently suited to aggressive riding, whether it was by coincidence of anatomy or design, this saddle was a near perfect match for our tester.

chickencycles.co.uk

Rating

INSTANT COMFORT
LONG RIDE SUPPORT
VALUE

OVERALL
9/10



SMP Hell £90 284g

The SMP Hell is definitely a lot better than the name would suggest. With its signature highly profiled shape and very large central cut-out, it isn't going to be to everyone's taste. However, those looking to reduce perineum pain will love the almost pressure-free ride that wide cut-out provides. The curved profile makes it very clear exactly where you should sit, giving the impression that you're 'in' the saddle, rather than balanced on top of it. The raised rear end gives support when going full gas, which is

especially noticeable when climbing. The Hell model is one of the more padded versions in the SMP line-up, which when combined with an all day chamois may be too much for some (at the other extreme, SMP also offers a full carbon saddle with no padding at all, with plenty of other options in between, so you should find something in the range to suit you). It also features exceptionally long rails, allowing plenty of forward-rear adjustability.

dilliglove.co.uk

Rating

INSTANT COMFORT
LONG RIDE SUPPORT
VALUE

OVERALL
8/10



Ritchey WCS Stream £84 206g

Rating

INSTANT COMFORT
LONG RIDE SUPPORT
VALUE

OVERALL

7/10

The Stream is the first saddle we've used that features Ritchey's new Vector Wing technology. Essentially, the 'wing' that sits under the saddle at the back spreads the two-points where the rails connect with the shell across three suspended connections, offering more flexibility and boosting all-day comfort for the rider. Does it work? Well, we didn't experience much discernible discomfort during our test rides, so we'll answer a tentative yes to that one. This is a very low profile saddle

(we actually had to raise the seatpost around 15mm to account for this) and the shape is reminiscent of the much-loved Selle Italia SLR (see opposite). There are no cut-outs, which is a good or bad thing depending on your preferences, and prior to the rider putting their weight on it, the shape is quite flat front-to-back. It felt good though, in a flat, supportive, racy kind of way. At a fairly feather-like 206g, racers will like the weight too.

paligap.cc



Selle Italia Flite L1 £100 226g

Selle Italia's Flite was a ubiquitous saddle choice among racers for many years. The old curved profile was superseded a few years ago by this updated flatter shape. However, it retains its signature race-oriented ride. Intended for riders with a wider pelvis, the L1 is firm and the padding is minimal which creates a very definite feeling of contact with the bike and the road beneath. Those searching for a forgiving all-day ride are probably better off looking elsewhere, but if it's

a direct feel you're after, the Flite would be a great option. The flat profile allows you to shuffle between several positions, making reaching the drops comfortable. A similarly thin nose to that on Prologo's Navo Evo gives plenty of leg clearance to reduce the risk of thigh chafing. The Flite shape is also available in a range of different options – find a participating dealer to try Selle Italia's 'idmatch' system to find the right option for you.

chickencycles.co.uk

Rating

INSTANT COMFORT
LONG RIDE SUPPORT
VALUE

OVERALL

7/10

FEEL IT IN YOUR SIT BONES

Why a good fit is important, and how to achieve it

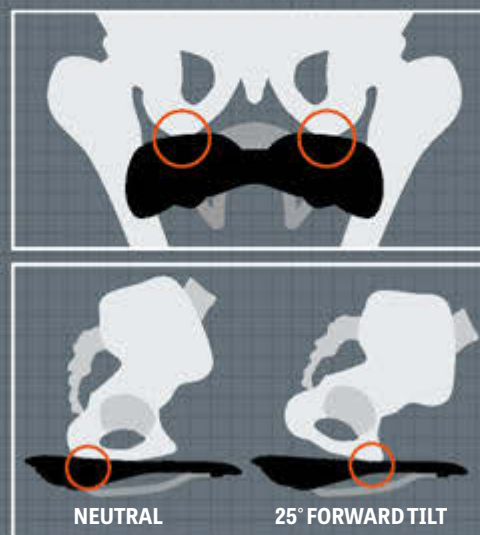



Finding the right saddle is one of the most important things you can do to ensure a comfortable ride, but with hundreds of options available it can be a daunting prospect. Ask anyone new to cycling and they'll probably believe large padded saddles are the most comfortable. However, this definitely isn't the case – overly padded saddles can mean unwanted chafing and pressure on soft tissues.

When searching for the right saddle, the two most important aspects to consider are width and profile. Most bike shops have a tool to measure the width of your ischial tuberosities or sit bones (above right) and can advise on a suitable

choice for you. A saddle that's too wide can cause excess interference and rubbing, whereas a saddle that's too narrow may increase peak pressure or encourage you to sit at the wrong angle.

The choice of saddle profile is driven by your anatomy, riding position and personal preference, and some experimentation with different options is always advisable. Some profiles typically suit a more upright 'natural' position whereas flexible riders with aggressive positions (below right) may find a central cut-out helps them get lower at the front by easing pressure on the perineum. Many bike shops offer a demo saddle programme so always try before you buy.





LIFE BEHIND BARS

Like Barney Gumble and Moe's Tavern, or Dylan Thomas and Brown's Hotel, there's a perfect bar out there for everyone. We'll help you find the right one for you



Buy an off-the-peg suit and unless you're a really odd shape, it should fit well enough. But to avoid looking like someone making their court debut, it'll take a bit of tailoring to get the fit perfect. It's the same with bikes: the size you end up with is usually based on how tall you are, but this doesn't necessarily reflect the rest of your anatomy or your riding style. Many people could benefit from swapping their handlebars for a better size or shape to suit their needs. However, with width, drop and reach to consider, picking the perfect model can be tricky. And then there's the range of profiles... Along with some expert fitting advice, we take a look at seven quality aluminium bars that could transform your ride.

Syntace Racelite CDR 7075

£80

Ergonomic 264g Drop 129mm Reach 90mm

Shallow ergonomic design from a German brand that's big on the continent but little known in the UK. With the size listed being taken from the outside of the curve, our medium (42cm) samples came up pretty narrow, so check the sizing. Tapering only slightly after the bulge, the tops are somewhat flattened to better fit the rider's palms. Sweeping slightly backwards, this creates a less stressful angle for your wrists. Designs with pronounced angles rather than curves force you to adopt specific positions – something some cyclists dislike. Conversely, knowing exactly where you are can be a bonus, as is the ease with which one can cover the brakes. We enjoyed the feeling of security provided by the sizable angled section, particularly while pushing downhill. The shallow drop and comfortable profile meant we spent more time getting down low than with more aggressive models. syntace.com



Rating

COMFORT
AGGRESSION
VERSATILITY

OVERALL
8
10

FSA Energy Traditional Bend

£80

Classic 289g Drop 145mm Reach 80mm

FSA's take on the classic shape is a little less severe than some, although you'll still need good flexibility to get down to the drops, and even better core strength to remain there. There's plenty of space for your hands, though. Moving forwards to get at the brake levers can be a struggle on bars with traditional curves; however, doing so on the FSA was surprisingly comfortable. The narrow diameter of the upper section will suit smaller hands, while the circular profile means cable guides are barely noticeable. This supposedly increases stiffness and it'd take stronger arms than ours to uncover any noticeable flex. One problem common to classic bars is the difficulty of getting a flat transition between hoods and brakes, and the Energy did fall down here – try as we might, we were left with a slight dip. www.windwave.co.uk



Rating

COMFORT
AGGRESSION
VERSATILITY

OVERALL
6
10

PRO Vibe Sprint

£75

Ergonomic, 307g Drop 131mm Reach 79mm

Created with Mark Cavendish, these bars are designed with a heavy emphasis on sprinting. Not only does the top section have a monstrously wide diameter, barely tapering away from the clamping zone, it also has internal ribbing to further boost stiffness. For larger hands, the oversized tops are surprisingly comfortable, as is the neat transition to the brake hoods, making these good bars for riders who like to spend time with their hands there. The extreme stiffness rewards climbing out of the saddle and inspires confidence through its directness when cornering. They're not as deep as we'd expected, so move down onto the drops and you'll find the angled section far shorter and steeper than some other ergo bars – great for generating power while sprinting but uncomfortable for any period of time. All in, a surprisingly usable bar for those craving stiffness or sprint-winning ability. maddison.co.uk



Rating

COMFORT
AGGRESSION
VERSATILITY

OVERALL
7
10

**Ritchey WCS Stroom II****£83****Ergonomic 287g Drop 128mm Reach 78mm**

Ritchey produces an enormous range of handlebars in different shapes and sizes. These ergo models pinch the wide flattened aero tops that first appeared on their costlier carbon siblings. This claims to reduce aerodynamic drag but while we're probably too slow for it to be of much benefit, we certainly appreciated having a comfortable place to rest our hands. Slightly backswept to reduce stress on the wrist, the tops did a good job of keeping weight distributed across the palms, helping prevent numbness and discomfort. They also provide somewhere to neatly route the cables underneath. We got on well with the angled section on the drops, although some riders might find the position too prescriptive compared to a rounder design. Still, it undoubtedly makes both locating your position on the bars and covering the brakes easier, which is likely to suit many riders.

paligap.cc

**Rating**

COMFORT

AGGRESSION

VERSATILITY

OVERALL

8

10

RAISING THE BARS

Ronan Descy, bike fitter at Pearson Cycles (pearsoncycles.co.uk), explains how to choose the perfect bars and set them up correctly

WIDTH

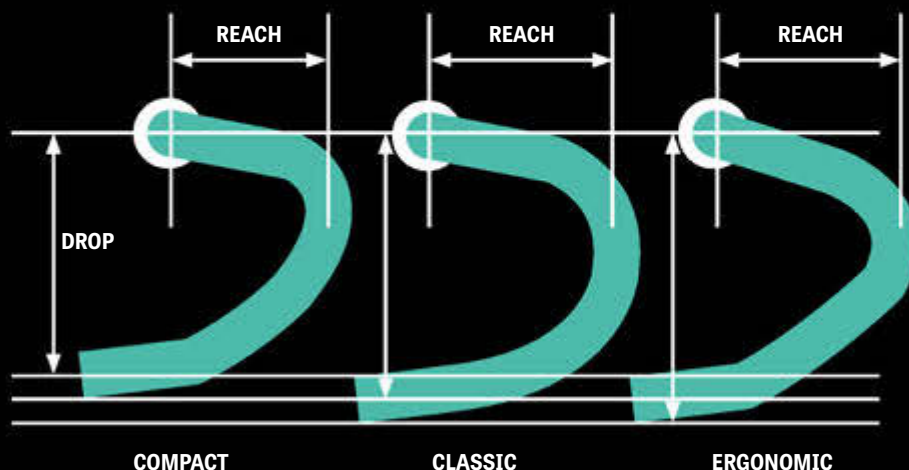
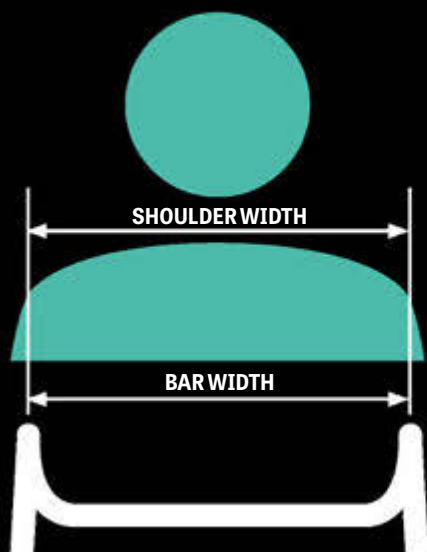
I tend to recommend the bars be shoulder-width or slightly wider. Excessively narrow bars can close the chest cavity, restricting breathing and thus oxygen delivery. Narrowing one's frontal area to gain a marginal increase in aerodynamics while simultaneously robbing your body of oxygen is counter-productive. On the flip side, using bars that are too wide can cause pain between the shoulder blades on longer rides. It also increases reach and can be unwieldy, particularly for women. There's no need to put the upper body under stress on the bike. The aim is always to provide stability to the upper body. Using overly narrow or wide bars is like performing narrow or wide push-ups – not as easy as the straight up and down ones.

DROP AND REACH

Most riders are happy with the shallow drop/short reach bars that tend to come stock on bikes these days. They've become popular with manufacturers because many people have only moderate flexibility and core strength, meaning this type suits them well. However, a deeper drop bar will allow riders with greater flexibility and core strength to achieve a lower and more aggressive position. This can be beneficial when racing or riding in a chain gang. Recently, reach (the distance between the stem and the front of the bars) has become shorter and shorter. Not only does this create a more agreeable position for average riders, requiring them to stretch forwards less to reach the hoods, it also counteracts the effect of modern gear shifters, which have become longer.

ERGONOMIC VERSUS CLASSIC

It's all about choice and preference really, and how you hold the drops. Anatomic shapes (assuming they're designed intelligently) – can offer a very nice and specific "pistol grip" in the drop position. It's a more limited shape as the bar can only really be held comfortably in one position while on the drops, but for some people it works. With radius shapes one has the ability to move the hands around more or select a different position, and there is a bigger variety of radius shapes available from very rounded to semi anatomic. Compact refers to a bar in either style that has a short reach and drop. A good handlebar will always allow a flat transition from bar to hood, creating a perfectly flat shelf like profile with no dip in between. Most people spend the majority of their time in the hood position and having that area flat is ergonomically and physiologically neutral.





Deda Zero100 Shallow Drop

£67

Compact 257g Drop 128mm Reach 75mm

With the lowest price and weight, the Zero100 bars started in credit before they were even bolted to the bike. Rapid Hand Movement (RHM) is Deda's name for what everyone else calls 'compact'. This shape twins a shallow drop with a profile that echoes ergonomic designs, but without the pronounced kinks, allowing riders to easily vary their position. Purists might look down on it but it's rapidly become the go-to shape due to its comfortable and versatile nature. Offering more support on the curve than a classic C-shape bend, it's easy to find a position between the tops and drops. More support and less stretch makes for lower stress through the back, neck and shoulders, meaning we were happy spending prolonged periods riding with our head down. Pair this with excellent stiffness, easy set-up and comfy ovalised tops and the Zero100 is our winner.

chickencycles.co.uk



Rating

COMFORT
AGGRESSION
VERSATILITY

OVERALL
9/10



3T Tornado Pro Bar

£80

Classic 270g Drop 139mm Reach 83mm

New-school tops with old-school drops. Ergonomic top sections are both thoroughly modern and extremely supportive. With the cables tucked neatly beneath, their flattened profile makes a comfortable shelf as they turn, and it's easy to set-up a pan-flat transition to the brake hoods. It's then a long way down to the drops, though. You'll need a good degree of flexibility and core strength to get down that low, but the flat back position this creates means you can really hammer along, working your legs and ducking beneath the wind. The traditional radius looks great but means it's harder to find a staging post between upper and lower sections, which also means covering the brakes feels less secure. A modern take on a design beloved of old-fashioned hard riders.

i-ride.co.uk



Rating

COMFORT
AGGRESSION
VERSATILITY

OVERALL
8/10



Zipp Service Course SL-80

£84

Compact 265g Drop 125mm Reach 80mm

The 80 in the name refers to the reach in millimetres – the medium reach and drop design sits in the middle of Zipp's range of three shapes. We found the 42cm size much broader than expected, thanks to the way the drops flare outwards slightly to provide a more neutral position for the wrists. Combined with a lower section that extends well behind where the bars meet the stem, this creates a spacious and comfortable place to rest the hands, while the shallow curve gives plenty of scope to move around. We're fans of wide bars that let you muscle the bike around and although they're not the stiffest on test, this probably boosts the SL-80's ability to absorb road buzz. The lack of cable channels doesn't detract from the ease of set-up and it was easy to achieve a flat transition from tops to brake hoods.

zipp.com



Rating

COMFORT
AGGRESSION
VERSATILITY

OVERALL
8/10

DISC WHEEL STEALS

We spin six mid-range wheelsets to find out the benefits of upgrading your disc brake-equipped road bike



Like the new kid at school, no one was quite sure where disc brakes would fit in road cycling's pecking order. Would they be stuck with the geeks, appearing only on gravel racers and cyclocross bikes or gain wider acceptance? Now with discs sitting on the popular kid's table, appearing on lightweight racing machines from the likes of Cannondale and Colnago, that question has been answered. We've looked at six versatile wheelsets to see which of them will give your riding a boost...



Spin K2 Koppenstopper Ultimate Fat Boy

£599

780g/900g

Named after the famous cobbled climb from the Tour of Flanders, the Koppenberg rims on these wheels are a massive 25mm wide. They're supposed to be disc specific but a big step on the outside indicates a braking surface – it's just not been machined down. Hand-built to order using Sapim CX Ray spokes, they should be pretty tough, and they ship with branded skewers and an anodized alloy locking. That big fat rim can take a beating too, so ideal for those cobbles. It expanded our 25mm tyre beyond belief, and the huge profile means they descend and corner well. They do feel heavy though, but as long as you stick to flatter cobbled roads rather than the Koppenberg itself, you'll be pretty pleased when you reach the end in one piece.

ridefullgas.com

Rating

VERSATILITY

SPEED

VALUE

OVERALL

7

10



BikesEtc
BEST VALUE

Novatec Jetfly Disc

£450

730g/870g

Novatec is a huge producer of rims and hubs for manufacturers the world over. Getting a wheelset straight from Novatec does have some benefits though, as they're both the lightest (despite being the deepest) and cheapest on test. Nice features include a steel band on the alloy cassette carrier to prevent it getting chewed up under load, and the wheels ship with a bundle of spare spokes. While the rim has an on-trend wide profile, it's not disc-specific and could have been even lighter without the extra braking surface. None the less, they're stiff and quick to accelerate. The 32mm depth of the rims helps keep them going on the flat but they're not so deep as to get picked up by gusts. A lovely pair of fast wheels, but that lightweight rim says 'soft alloy' to us so we'd suggest avoiding the rough stuff.

extrauk.co.uk

Rating

VERSATILITY

SPEED

VALUE

OVERALL
8/10



American Classic Hurricane

£539

810g/890g

By American Classic's own admission, these are heavyweight wheels but that's because they're designed for large and powerful riders. The semi-aero rims are 24mm deep, 22mm wide and tubeless-ready. They're laced to an own-brand hub by 32 chunky spokes in a three-cross pattern that makes them very strong – you can ride them over the roughest terrain. The hubs are available in loads of configurations too, with support for bolt-thru axles front and rear. You can even get them with a SRAM XX1 cassette body, so they're compatible with the latest innovations in cyclocross. They were never going to go uphill with much finesse but they're not meant to. These are 'fit and forget' wheels: stick them on your bike, use them for anything and spend less time worrying, more time riding.

todayscyclist.co.uk

Rating

VERSATILITY

SPEED

VALUE

OVERALL
8/10



**Halo Devaura Disc****£460**

770g/890g

Halo has brought its Devaura bang up to date by making the rims wider, deeper and tubeless-ready. The hubs are Halo's own design and come with some of the smoothest bearings we've ever felt out of the box. They're laced together by 28 straight-pull bladed spokes, which are supposedly stronger than traditional spokes, though you can't feel a difference in use; it can also be more difficult to find replacements if you snap one. If you have one of the few frames with 130mm rear spacing, you'll appreciate the adaptor to reduce the rear hub width from the standard 135mm. They're no flyweights, so it takes a bit of effort to get them going, but once up to speed, it's effortless to maintain, thanks to the super smooth hubs and deep rim. A decent pair of mid-section aero wheels, but we'd keep them on the road to be on the safe side.

ison-distribution.com**Rating**

VERSATILITY

SPEED

VALUE

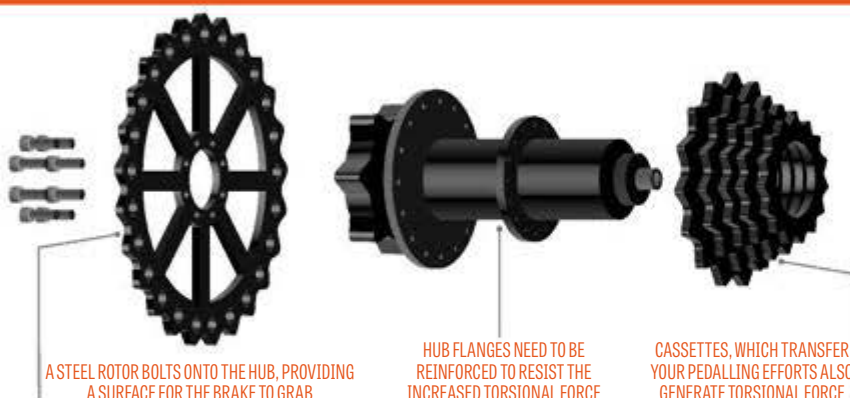
OVERALL

8/10

**DESIGNING FOR DISCS**

Tom Marchment of new British brand huntbikewheels.com explains the challenges of designing for discs...

'The forces handled by disc brake wheels are unique. You have to take the braking force from the rotor, apply it to the hub and then transmit it to the rim via the spokes. That's opposed to a conventional wheel, where the braking force is applied to the rim and then to the road. With the rotor being attached to it, the hub deals with a far greater degree of braking force than on a traditional wheel. Therefore we start by increasing the strength of the flanges, as these will transmit braking forces from the



A STEEL ROTOR BOLTS ONTO THE HUB, PROVIDING A SURFACE FOR THE BRAKE TO GRAB

HUB FLANGES NEED TO BE REINFORCED TO RESIST THE INCREASED TORSIONAL FORCE

CASSETTES, WHICH TRANSFER YOUR PEDALLING EFFORTS ALSO GENERATE TORSIONAL FORCE

hub to the spokes. On disc-brake wheels, spokes are usually laced in a two-cross pattern, as a radial pattern (emanating directly from the hub without overlapping each other) can't deal with the twisting forces generated by the rotor. We'll also use more robust spokes. As both wheels are

subject to torsional forces, either through pedalling or braking, we'll match the spoke count front and rear – typically at least 24 per wheel. This can increase weight, but because the rims are no longer subject to wear from brakes, we can make them lighter, potentially improving acceleration.'



Miche Syntium

£490

840g/1,000g

On paper, these wheels don't look quite as attractive as some of the others on test but you shouldn't judge a book by its cover. Or the wheels by the numbers. The rims have an old-school 15mm internal width, so our 25mm tyre came up as just that. There's some nice tech going on though. For a start the rims are asymmetric, ensuring well-balanced spoke tension and therefore a stronger, longer-lasting wheel. They're heavy but all the weight is in the good quality aluminium hubs, rather than the rims, so they accelerate well, and they're stiff too, thanks to the 28 spokes. Cornering is what you expect from regular road wheels, with none of the extra grip or comfort a wider volume tyre provides. They're not stand-out stars but the solid construction of the hubs makes them a reliable pair of training wheels. chickencycles.co.uk

Rating

VERSATILITY

SPEED

VALUE

OVERALL

8


10



Stan's Grail

£495

750g/850g

New to the Stan's NoTubes line-up, the tubeless-ready Grail rim slots between the Alpha road series and the cyclocross-focused IronCross. While the IronCross is rated to a maximum tyre pressure of 45psi, the Grail takes tyres inflated to over 100psi. It's also a lot more versatile, accepting tyres from 25mm up to 34mm. With a rim depth of 24.5mm and reinforced sidewalls to support higher pressures, it's heavier than the IronCross too – 460g compared to 385g – but the wheels remain reasonably light overall. The rim is also very wide (24.1mm) so the 25mm tyre we fitted swelled up to more like 28mm. Out on the road, they're stiff enough and accelerate quickly, while the large volume of air in the tyres makes them really comfortable too. A great all-round wheelset that would be ideally suited to a multi-purpose bike. 

paligap.cc

Rating

VERSATILITY

SPEED

VALUE

OVERALL

9

10



BikesEtc
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IN TEST





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APPETITE FOR INSTRUCTION

The best virtual utilities to enhance your riding and fitness, and much else besides

 You may think of the bicycle as a means of liberation from the trials of everyday life, but with a smartphone in your pocket tethering you to the virtual world, it's hard to truly escape real life however fast you pedal. But is that really such a bad thing? With their powerful processors and array

of sensors, smartphones can be your perfect cycling companion. We've looked at a range of apps to find the best for everything from mapping and tracking your ride to helping you deal with emergencies or avoiding the worst of the weather. All you have to do is make sure your work emails remain switched off.

TRACK YOUR RIDES



Bikehub Free

iOS & Android

Bikehub turns your phone into a car-style satnav but one that uses the community generated OpenCycleMap to find routes along quieter cycle-friendly roads and infrastructure. The route criteria can be customised to provide either quickest or quietest routes, as well as taking in specific points along the way, it will even provide a preview of the gradient. Once it's created a route, the app provides a heads-up display to follow, along with audio prompts and direction cues to keep you on track. For areas with poor reception you can also cache maps in advance. routes.bikehub.co.uk



Endomondo

Free (Premium £4.49 per month/£22.99 per year)

iOS, Android, BlackBerry, Windows

Perfect for tracking a range of different activities, Endomondo focuses on cumulative personal achievements. Helping to both structure and log workouts, it provides real-time information on progress via headphones along with prompts for predefined or user-created workouts. A strong social element extends to receiving supportive messages/slogging from friends. It can harvest heart rate, speed etc from compatible hardware, but is less competitive than Strava, and its emphasis on routes rather than segments means exploring places to ride is easy. endomondo.com



Cyclemeter

Free (Elite upgrade £3.99)

iOS only

Data fiends will love the array of graphs plotting your activities that this app produces, although its expansive range of options may be off-putting for casual users. In order to connect supplementary sensors, you'll need to upgrade to Elite. Visual representations of each recorded metric can be overlaid and recorded by date, route or activity, helping you keep an extremely detailed record of your efforts. Routes are also traced on a map. With your headphones plugged in, the app can also work like a virtual coach, yelling splits and other useful information at you as you ride. abvio.com



Strava

Free (Premium £4.49 per month/£44.99 per year)

iOS & Android

With UK users logging over half a billion kilometres last year Strava is still the most recognisable of cycling apps. Offering plenty of mapping and tracking features, it can overlay data from an array of paired sensors onto a digital trace of your ride. Still, as useful as this is, the key to its success remains the localised competitive element. Seeing that someone has snatched the King Of The Mountain on your favourite segment always necessitates a response. It's easy to get sucked into the competitive side of Strava and that remains its USP. strava.com

Rating

FUNCTIONALITY
USABILITY

OVERALL
8/10

Rating

FUNCTIONALITY
USABILITY

OVERALL
8/10

Rating

FUNCTIONALITY
USABILITY

OVERALL
6/10

Rating

FUNCTIONALITY
USABILITY

OVERALL
9/10

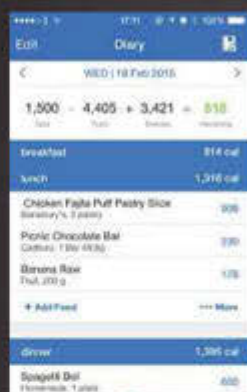
IMPROVE YOUR FITNESS



MyFitnessPal Free

iOS, Android & Windows

A food journal that balances calories consumed against exercise undertaken. With a huge user-created database of foods, logging meals is easy – it's even possible to upload info by scanning barcodes on packaging. It even remembers regularly consumed items, making adding them even speedier. You offset the calories consumed by logging your exercise, with an increasing number of apps, including Strava and Endomondo, allowing you to directly sync your workouts. Perfect for working out how much credit you need to earn through sweat for that Friday beer and cheeseburger marathon. myfitnesspal.com



Rating

FUNCTIONALITY
USABILITY

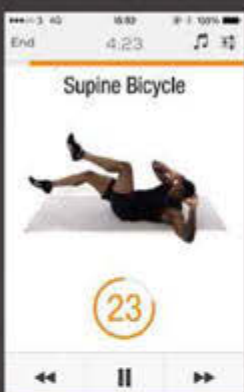
OVERALL
8/10



Sworkit Free (Sworkit Pro £1.49)

iOS & Android

Fancy doing a bit of cross-training? Sworkit will design an equipment-free circuit-training workout to fit whatever time you have to spare, from five minutes up to an hour. Choose a duration and style of workout (strength, cardio, yoga or stretching) and the app does the rest, guiding you through different exercises via audio prompts and video demos. It'll even calculate calories burned and sync with apps like MyFitnessPal. Perfect for time-crunched athletes the lack of equipment makes it perfect should you find yourself away from the gym. The Pro upgrade has increased customisability and allows you to save multiple custom workouts. sworkit.com



Rating

FUNCTIONALITY
USABILITY

OVERALL
7/10



Moves Free

iOS & Android

Passively tracking activities throughout the day, Moves automatically differentiates between activities such as running walking or cycling using only your phone's accelerometer. The user interface is simplicity itself in keeping with the limited amount of data captured. This is then presented as colour-coded timeline of your activities and cumulative totals. Aiming to compete with device-based fitness trackers such as Fitbit, it does a good job, assuming you're happy with the minimal data and functionality. Its only real downside is that it drains battery quickly, meaning you'll need to recharge more often. moves-app.com



Rating

FUNCTIONALITY
USABILITY

OVERALL
8/10



Seconds Free (Seconds Pro £3.99)

iOS & Android

A simple app for timing your workouts, with customisable schedules for HIIT sessions, circuit training, tabata and more. Providing a continuous countdown with visual and audio prompts, it's perfect for ensuring you stick to a proper warm up and warm down routine. Twinning playlists or songs for each activity helps keep you motivated (tip: the greatest workout song ever is the extended version of *Move On Up* by Curtis Mayfield). The in-app ads are unobtrusive although you can remove them by upgrading to the Pro version. This also allows you to save your workouts for repeated use and share them with friends. intervaltimer.com



Rating

FUNCTIONALITY
USABILITY

OVERALL
7/10

FOUR MORE TO CONSIDER

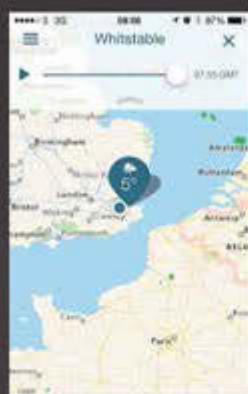


AccuWeather

Free (Platinum £2.99)

iOS, Android, BlackBerry & Windows

Along with actual temperature Accuweather's 'RealFeel' rating takes into account factors including humidity, wind speed and cloud cover to help gauge how cold it'll feel outside for a human as opposed to a thermometer. This helps take the guesswork out of the tricky process of deciding what to wear on a ride. Not only are forecasts accurate and detailed, particularly in the long term, but the intuitive navigation makes it easier to drill down into further layers of information – and there really is a lot of information on offer. Wind speed and direction means you can choose which way you head out to ensure a tailwind for the ride home. accuweather.com



Rating

FUNCTIONALITY
USABILITY

OVERALL
9/10



St John's Ambulance

Free

iOS, Android & BlackBerry

A first aid app tailored for cyclists, with information kept to a minimum for easy navigation in an emergency. Open the app and the simple menu will help you recognise and treat a range of common accidents from the minor to the life threatening. Good for brushing up following a course, it's also straight forward enough to follow even for those without proper first aid training. However, the cycling-specific features add little compared to the standard St John's Ambulance first aid app, which covers a much wider range of eventualities in an equally accessible manner, meaning that's the one we recommend. sja.org.uk



Rating

FUNCTIONALITY
USABILITY

OVERALL
8/10

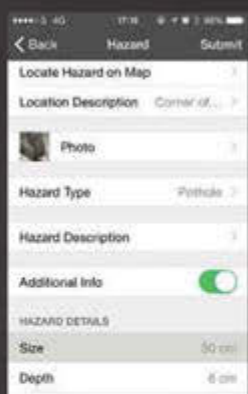


Fill That Hole

Free

iOS & Android

Not an alternative to Tinder but rather an app that makes it easy to report potholes and other potential road hazards such as poor quality repairs or raised manhole covers. According to the CTC (Cyclist's Touring Club) who have developed this app, there's an average of one defect for every 110 metres of road, and local councils have a duty to repair them once notified of their existence. Use your smartphone's camera to take a picture, and its GPS functionality to create a location pin, then add a brief description and hit the upload button. The CTC will make sure the information is forwarded to the correct local authorities. fillthathole.org.uk



Rating

FUNCTIONALITY
USABILITY

OVERALL
10/10



Bike Fast Fit

£3.99

iOS only

Used alongside a turbo trainer and a tripod, this app provides real-time video analysis of your cycling position. With professional fits costing hundreds of pounds, could this be a perfect homebrew solution? Perhaps. Having aligned the dots with the relevant point on your body, the app will spit out all the crucial angles and measurements with an impressively high degree of accuracy. It'll even suggest some guideline parameters for where these should be. However, it'll still take a skilled fitter to properly interpret the data and apply it to setting up your bike properly. A great tool if you know how to use it. bikefastfit.com



Rating

FUNCTIONALITY
USABILITY

OVERALL
7/10



Wesley Doyle
Editor

Rapha Lightweight Cycling Gilet p108

I've had one of these for a while so was keen to try the latest version, with contrast trim and muted zipper. It still functioned brilliantly as a gilet and would be a stylish addition to any cyclist's wardrobe. Call me shallow, but when I look like a better cyclist, I feel like one too. And that is Rapha's genius.

Beet It Sport Pro Elite Shot p49

If like me there's only so much sugar you can take before your teeth start to ache then the earthy taste of this nitrate-dense supplement will be a welcome alternative to gels. It won't win you any sprints but the benefits on a Sunday club run are really noticeable.



Andy Waterman Deputy Editor

Selle Italia Flite saddle p113

I've not ridden a Flite for years but back in my formative period on bikes, this was the saddle to have, and for the first part of my cycling life, I rode nothing else. Call it nostalgia, but I can't help thinking the Flite still looks like a great design and would make a handsome upgrade to my current ride.

PRO Vibe Sprint handlebars p118

I've always been a fan of PRO handlebars and have used their pro-compact shape bars on a couple of my own bikes for the last five years or so. I prefer alloy bars and the shape seems to suit me, so I would be interested to try this design.

Andrew Sumner

Art Director

Shimano R171 shoes p18

I don't envy Phil Liggett's gig providing commentary over hours on end of racing each year, and no one begrudges him his stock catchphrases. In fact, people listen out for them. Making a break uphill is always 'dancing on the pedals' and with their two-tone styling, these new Shimano shoes are perfect for doing exactly that.



Etc

The BikesEtc team picks out some of its favourite items featured in this month's issue...

Joseph Delves
Staff Writer

General election p64

Limoncello for the Lib Dems, cherry brandy for Labour, curacao for the Tories. The election night drinking game used to be so simple. Now we have to find emerald and purple drinks for the Greens and UKIP. A shot as each constituency returns its results and by the morning, you won't care who won.

Fabric, Scoop Race saddle p113

Running the same saddle on my road bike and mountain bike keeps my bum happy whether I'm on tarmac or dirt. While this is a racy saddle by MTB standards, it may be too squishy for some roadies – while I fancy myself as a tough guy off road, on the road I'm obviously a softie.




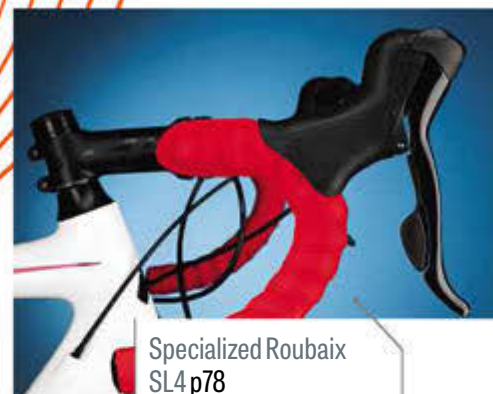
David Kenning
Production Editor

Vermarc Zero Aqua jersey p103

This new breed of high-tech all-weather jersey is fantastic for year-round cyclists. I tried out this one on a 200km ride in early March, enduring icy winds and occasional showers all day but remaining warm and dry throughout. And that makes me happy.

Specialized Roubaix SL4 p78

Back in 2008, I was in the market for my first carbon road bike and the newly launched Roubaix was one of the top choices on my shortlist. Although I went for a slightly cheaper alternative in the end, I often wonder what might have been... It was a great bike then and advances in technology mean it's an even better bike now. 



ROAD DEMO WEEKEND

11th April Rutland Cycling, Grafham

12th April Rutland Cycling, Whitwell

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Fineshade Cycling, Top Lodge, Fineshade Woods, Northants, NN17 3BB Tel: 01780 440899

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